

SEQUENCE LISTING

<110> Bhatia, Ajay
 Probst, Peter

<120> COMPOUNDS AND METHODS FOR TREATMENT
 AND DIAGNOSIS OF CHLAMYDIAL INFECTION

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<140> US

<141> 2001-12-05

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<211> 2397

<212> DNA

<213> Chlamydia trachomatis

<400> 3

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<210> 4

<211> 1094

<212> DNA

<213> Chlamydia trachomatis

<400> 4

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<210> 5

<211> 2129

<212> DNA

<213> Chlamydia trachomatis

<400> 5

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<212> DNA

<213> *Chlamydia trachomatis*

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<210> 7

<211> 861

<212> DNA

<213> Chlamydia trachomatis

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<210> 8

<211> 763

<212> DNA

<213> Chlamydia trachomatis

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<210> 9

<211> 665

<212> DNA

<213> Chlamydia trachomatis

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<210> 10

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<212> DNA

<213> Chlamydia trachomatis

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<210> 11

<211> 1474

<212> DNA

<213> Chlamydia trachomatis

<400> 11

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<210> 12

<211> 2017

<212> DNA

<213> Chlamydia trachomatis

<400> 12

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<210> 13

<211> 1171

<212> DNA

<213> Chlamydia trachomatis

<400> 13

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tattcctatc gttgggtccg gtgggtcagc tgcttccgca ggaagtgcgg caggagcgtt 180
gaaatcctct aacaattcag gaagaatttc cttgttgctt gatgatgtag acaatgaaat 240

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<210> 14

<211> 877

<212> DNA

<213> Chlamydia trachomatis

<400> 14

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<210> 15

<211> 396

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 15

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<210> 16

<211> 516

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 16
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<210> 17
 <211> 723
 <212> DNA
 <213> Chlamydia trachomatis serovar E

<400> 17
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<210> 18
 <211> 1377
 <212> DNA
 <213> Chlamydia trachomatis serovar E

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<210> 19

<211> 1736

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 19

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<210> 20

<211> 1135

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 20

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<210> 21

<211> 731

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 21

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<210> 22

<211> 1181

<212> DNA

<213> Chlamydia trachomatis serovar E

<400> 22

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<210> 23
 <211> 167
 <212> DNA
 <213> Chlamydia trachomatis serovar E

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<210> 24
 <211> 1265
 <212> DNA
 <213> Chlamydia trachomatis serovar E

<400> 24
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<210> 25
 <211> 463
 <212> DNA
 <213> Chlamydia trachomatis serovar E

<400> 25
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<210> 26
 <211> 636
 <212> DNA

<213> Chlamydia trachomatis serovar E

<400> 26

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<210> 27

<211> 1797

<212> DNA

<213> Chlamydia trachomatis serE

<400> 27

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<210> 28

<211> 1983

<212> DNA

<213> Chlamydia trachomatis serE

<400> 28

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<210> 29

<211> 1224

<212> DNA

<213> Chlamydia trachomatis serE

<400> 29

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<211> 883
<212> DNA
<213> Chlamydia trachomatis serE
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<210> 31
<211> 393
<212> DNA
<213> Chlamydia trachomatis serE
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<210> 32
<211> 2577
<212> DNA
<213> Chlamydia trachomatis serE
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<210> 33

<211> 554

<212> DNA

<213> Chlamydia trachomatis serE

<400> 33

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<210> 34

<211> 1433

<212> DNA

<213> Chlamydia trachomatis serE

<400> 34

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tttttgaagc agcacttcaa gaagtttagg cagaccataa cccagcgat tcccgttact 1380
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<210> 35

<211> 196

<212> DNA

<213> Chlamydia trachomatis

<400> 35

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ctcgtgccga tgatacagca gtcgcagtga atcaagggtg taaacgcaag ggagctgtat 60
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caggggatga gcgtcgacgg gctcatgatg tcaatatagc tagctggatt ccagatcttt 180
tcttcaaagc tttaaa 196

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<210> 36

<211> 1990

<212> DNA

<213> Chlamydia trachomatis

<400> 36

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ttcactaggc tcatgagcct ctaactcttc tggagtaact cctagagcaa acacaaactg 60
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taacttacgc gcctctaaat catcgcaacg actatgaatc gcagataaat atttaggaaa 180
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ttgtgtaatg gagaaaatcc ataccaacac agcccagata ccagtactcc acgccgcatt 660

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 caacgcaaca tttgctcaat aggagattct tcataagaaa gtacacaatc tgggtcttga 1920
 ggcagcgaac acgaatgatt tattaatagc cgtagcccaa actccttcgc caaatgagcc 1980
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<210> 37

<211> 2093

<212> DNA

<213> Chlamydia trachomatis

<400> 37

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 aacgtatcca acaattacat ccttttaggag tcggagcgcc ttccctacag tcctactggg 240
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taggaaaggc tttgatattg aaataatagt ctttggcata cgctgtaat tgctctttag 1800
taagctcccc cttcgacccat ttcacataaa acgtgtgttc tagcatatgc ttattttgaa 1860
taattaaatc taactgatct aaaaaattca taaacacctc catcatttct tttcttgact 1920
ccacgtaacc gcttgcaaaa aaggtcogta taagtcctct gtttcatcta tgcgcaaaga 1980
acaatactct tctcgagaag taggatgtga atggtagacc atattagggtg cctgctctat 2040
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<210> 38
<211> 1834
<212> DNA
<213> Chlamydia trachomatis

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<400> 38
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gaaaatggct gatttgatgg cagctctcca agatatggag cgtttagcta attcagatcc 180
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agtgttgaaa acaactgact ctgcagatca gattccagcg attaatagtc agtttagagat 360
caacaaaaat tctgcagatc aaattatcaa agatctggaa agacaaaaca taagttatga 420
agctgttctc actaacgcag gagagggttat caaagcttct tctgaagcgg gaattaagtt 480
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aaacattgct tctctattct ctgggttatct ttcttaacgt gtgattgaag tttgtgaatg 1740
agggggagcc aaaaaagaat ttcttttttg gctctttttt cttttcaaag gaatctcgtg 1800
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<210> 39
<211> 1180
<212> DNA
<213> Chlamydia trachomatis

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<400> 39
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attatttttg ttaaaagaaa tacttaatga gttttattta attaacgaaa cgaaaagctt 180
gctaatagaaa attattcaca cagctatcga atttgctccg gtaatcaaag ccggaggcct 240

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gggagacgcg ctatacggac tagcaaaagc tttagccgct aatcacacaa cggaagtggg 300
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aggaattaaa gtaactctat tcaaactcga cacacagcca gatttattcg agaatgcgga 480
aacaatctac acaagcgatg atgccttcog tttttgcgct tttctgctg ctgcggcctc 540
ctacatccaa aaagaaggag ccaatatcgt tcatttacac gattggcata caggattagt 600
tgctggacta ctcaaacaac agccctgctc tcaattacaa aagattgttc ttacctaca 660
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gaataaaaaa gccttgcagc aaagattagg cctctcttta gaacactctc cttgcgtgtg 1080
cattatttct agaattgctg agcagaaagg tctctacttt atgaaacagg ccattctcca 1140
tgactagaa aacgcttaca cgctcattat tataggtacc 1180

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<210> 40

<211> 1297

<212> DNA

<213> Chlamydia trachomatis

<400> 40

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cattaacatc agggcagagg gcaagtgagc gagcattatc ggctttcaca gatcctccgt 180
aaagaatggg ggtgcgttcc gcaatatctt tggaaaagag agaagcaatc gtttttctac 240
agaaagcatg ggtttctga actagatcag gatgagctac tttccggtg cctatagccc 300
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tcagttgatt taaaagaata tcttgagttg ctccagattc ttgttcttct aaagtttctc 420
caatacacag aactggaatc attccactat ggatagctgc agcagctttt tcagcaagta 480
caggattttg ttcatgaaag atatgacgtc tttcggaatg tccgatgaga acaaaatcga 540
ctccgatatc tttgagcatt ggggctgaaa tctcaccagt aaaagctcct gagtcagctt 600
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<210> 41

<211> 1141

<212> DNA

<213> Chlamydia trachomatis

<400> 41

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tatcatttcc ctatactgtt ataggagatc cgagtgggac tactgttttt tctgcaggag 180
agttaacggt aaaaaatcct gacaattcta ttgcagcttt gcctttaagt tgttttggga 240
acttatttag gagttttact gttttaggga gaggacactc gttgactttc gagaacatac 300

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ggactttctac aaatggagct gcactaagt acagcgctaa tagcgggtta tttactattg 360
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 caacgactaa taatggtagc cagactccga cgacaacatc tacaccgtct aatggtagta 480
 tttattctaa aacagatctt ttgttactca ataatgagaa gttctcattc tatagtaatt 540
 tagtctctgg agatggggga gctatagatg ctaagagctt aacggttcaa ggaattagca 600
 agctttgtgt cttccaagaa aatactgctc aagctgatgg gggagcttgt caagtagtca 660
 ccagtttctc tgctatggct aacgaggctc ctattgcctt tatagcgaat gttgcaggag 720
 taagaggggg agggattgct gctgttcagg atgggcagca gggagtgtca tcatctactt 780
 caacagaaga tccagtagta agtttttcca gaaatactgc ggtagagttt gatgggaacg 840
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 t 1141

<210> 42
 <211> 822
 <212> DNA
 <213> Chlamydia trachomatis

<400> 42
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 agcttcaacg taagcattcc aaagctccgt acttacaata ttattgcgga tagagcgaat 180
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 cttcattttt tttaaagtaa aatgatgcat gttagccgct gttggccctg ggagataacg 480
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<210> 43
 <211> 1634
 <212> DNA
 <213> Chlamydia trachomatis

<400> 43
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 gcagcgattg ttatagaaaa cgatgttacc acgatttcct gttagagaac agatagggga 480
 gaagatcgct cctcctgcac aacaggcggt attgatgaag aagagatcgc agttattact 540
 ctcaaaagaa ttgctcgctc cagcatagat agcgccacct ttctctgctg tattagtttg 600
 aatacagatg ttgtccataa agagaaaaca agactgattc tcgctcacia caaagggtatt 660
 agcggtagta atggctcctc cttggacata agaaaagttc ttcataaatc cgaccacatc 720
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<210> 44
<211> 1862
<212> DNA
<213> Chlamydia trachomatis
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$\langle 210 \rangle$	45
$\langle 211 \rangle$	1668

<212> DNA

<213> Chlamydia trachomatis

<400> 45

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agaaaatccg atagcagaaa tagaagaatt cgatgtgggt gcgaacaaag ctcaagattg 60
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atttttcgagg tatgaacctt cattatgatg aaaactaage acgaatattc ttttggcggt 180
attoctatca gatttttttg tactccggat agaagtacct taaaggcttg ttttatctgc 240
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ccaaaaatat ttgtggaaaa ttattccttt aatgacaaag aagaaatctt tgtacgtaaa 420
gaggtaactt attttcttgc agagggttaa ggcgaggtac atgctgatcc tgatgagatc 480
tgtgatgtgc agtggctaag ctttcaagaa ggtttacgcc ttttaaattt cccagaaatt 540
cgtaatatgt ttacggaagc agatgaattt gttcaaagtt atctatttgc ttcataaagt 600
cccctaggat gaaaaaaact tggtttaggag gggccggtgt ggaatctccc acaacagcct 660
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<210> 46

<211> 2010

<212> DNA

<213> Chlamydia trachomatis

<400> 46

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<211> 2044

<212> DNA

<213> Chlamydia trachomatis

<400> 47

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2044

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<211> 2937

<212> DNA

<213> Chlamydia pneumoniae

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<212> DNA
<213> Chlamydia pneumoniae

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<211> 252
<212> DNA
<213> Chlamydia pneumoniae

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<210> 52
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<212> DNA
<213> Chlamydia pneumoniae

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<400> 52

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<211> 1431

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<213> Chlamydia pneumoniae

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<211> 1041

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<213> Chlamydia pneumoniae


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<211> 1386

<212> DNA

<213> Chlamydia pneumoniae

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<213> Chlamydia pneumoniae

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<211> 1086

<212> DNA

<213> Chlamydia pneumoniae

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1086

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<211> 4830

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<213> *Chlamydia pneumoniae*

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 <211> 591
 <212> DNA
 <213> Chlamydia pneumoniae

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<210> 61
 <211> 1983
 <212> DNA

<213> Chlamydia pneumoniae

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<210> 62

<211> 1860

<212> DNA

<213> Chlamydia pneumoniae

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<210> 63
<211> 1956
<212> DNA
<213> Chlamydia pneumoniae

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<211> 264
<212> DNA
<213> Chlamydia pneumoniae
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<211> 978
<212> PRT
<213> Chlamydia pneumoniae
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	65				70					75				80	
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Glu	Asn	Ile	Ser	Gln	Ser	Ile	Lys	Phe	Phe	Gly	Asn	Leu	Ala	Asn	Phe
			180					185					190		
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Gly	Val	Ile	Tyr	Gly	Gly	Ser	Ser	Leu	Leu	Phe	Glu	Asn	Asn	Ser	Gly
225				230						235				240	
Cys	Ile	Ile	Phe	Thr	Ala	Asn	Ser	Cys	Val	Asn	Ser	Leu	Lys	Gly	Val
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Ile	Pro	Thr	Gly	Thr	Phe	Glu	Leu	Lys	Asn	Asn	Gln	Gly	Lys	Cys	Thr
Phe	Ser	Tyr	Asn	Gly	Thr	Pro	Asn	Asp	Ala	Gly	Ala	Ile	Tyr	Ala	Glu
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Gln	Ala	Ile	Phe	Ile	Gly	Pro	Ser	Val	Gly	Asp	Pro	Ala	Lys	Gln	Thr
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Lys	Ile	Thr	Asp	Asn	Ala	Val	Val	Asn	Val	Leu	Gly	Phe	Ala	Thr	Gln
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Pro	Val	Ala	Ile	Pro	Ile	Ala	Val	Phe	Lys	Gly	Ala	Thr	Val	Thr	Lys
Thr	Gly	Phe	Pro	Asp	Gly	Glu	Ile	Ala	Thr	Pro	Ser	His	Tyr	Gly	Tyr
Gln	Gly	Lys	Trp	Ser	Tyr	Thr	Trp	Ser	Arg	Pro	Leu	Leu	Ile	Pro	Ala
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Tyr	Ala	Val	Trp	Asn	Ser	Asp	Thr	Leu	Val	Arg	Ser	Thr	Tyr	Ile	Leu
Asp	Pro	Glu	Arg	Tyr	Gly	Glu	Ile	Val	Ser	Asn	Ser	Leu	Trp	Ile	Ser
Phe	Leu	Gly	Asn	Gln	Ala	Phe	Ser	Asp	Ile	Leu	Gln	Asp	Val	Leu	Leu
Ile	Asp	His	Pro	Gly	Leu	Ser	Ile	Thr	Ala	Lys	Ala	Leu	Gly	Ala	Tyr
Val	Glu	His	Thr	Pro	Arg	Gln	Gly	His	Glu	Gly	Phe	Ser	Gly	Arg	Tyr

705 710 715 720
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 725 730 735
 Leu Gly Leu Ser Phe Gly Gln Leu Tyr Gly Lys Thr Asn Ala Asn Pro
 740 745 750
 Tyr Asp Ser Arg Cys Ser Glu Gln Met Tyr Leu Leu Ser Phe Phe Gly
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 770 775 780
 Ala Ala Tyr Gly Tyr Ser Lys Asn His Leu Asn Thr Thr Tyr Leu Arg
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 Pro Asp Lys Ala Pro Lys Ser Gln Gly Gln Trp His Asn Asn Ser Tyr
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 835 840 845
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 50 55 60
 Cys Gly Gln Gly Phe Leu Glu Arg Ala Leu Pro Lys Glu Cys Arg Tyr
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 100 105 110
 Leu Glu Phe Val Glu Pro Thr Leu Phe Ser His Ala Val Ala Ile Leu

115 120 125
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 Thr Leu Leu Glu Pro Leu Gly Gln Phe Phe Ile Val Leu Asn His Pro
 145 150 155 160
 Cys Phe Arg Ile Pro Arg Ala Ser Ser Trp His Tyr Asp Glu Asn Lys
 165 170 175
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 Pro Ile Met Ala His Pro Gly Gln Lys Asp Ser Pro Ser Thr Leu Ser
 195 200 205
 Phe His Phe Pro Leu Ser Tyr Trp Phe Lys Glu Leu Ser Ser His Gly
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 Phe Leu Val Ser Gly Leu Glu Glu Trp Thr Ser Ser Lys Thr Ser Thr
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 <212> PRT
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 Lys Ile Glu Trp Val Ser Lys His Asp Leu Lys Lys Tyr Ile Lys Val
 35 40 45
 Val Leu Ile Ser Ile Phe Gly Phe Gly Phe Ala Ile Tyr Phe Val Asp
 50 55 60
 Leu Val Leu Arg Lys Ser Ile Thr Cys Leu Asp Gly Ile Thr Thr Phe
 65 70 75 80
 Leu Phe Gly

<210> 68
 <211> 394
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 68
 Met Ser Lys Glu Thr Phe Gln Arg Asn Lys Pro His Ile Asn Ile Gly
 5 10 15
 Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu Thr Ala Ala Ile
 20 25 30
 Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Ser Phe Arg Asp Tyr Ser
 35 40 45
 Ser Ile Asp Asn Thr Pro Glu Lys Ala Arg Gly Ile Thr Ile Asn
 50 55 60
 Ala Ser His Val Glu Tyr Glu Thr Pro Asn Arg His Tyr Ala His Val
 65 70 75 80
 Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala

85 90 95
 Ala Gln Met Asp Gly Ala Ile Leu Val Val Ser Ala Thr Asp Gly Ala
 100 105 110
 Met Pro Gln Thr Lys Glu His Ile Leu Leu Ala Arg Gln Val Gly Val
 115 120 125
 Pro Tyr Ile Val Val Phe Leu Asn Lys Val Asp Met Ile Ser Gln Glu
 130 135 140
 Asp Ala Glu Leu Ile Asp Leu Val Glu Met Glu Leu Ser Glu Leu Leu
 145 150 155 160
 Glu Glu Lys Gly Tyr Lys Gly Cys Pro Ile Ile Arg Gly Ser Ala Leu
 165 170 175
 Lys Ala Leu Glu Gly Asp Ala Asn Tyr Ile Glu Lys Val Arg Glu Leu
 180 185 190
 Met Gln Ala Val Asp Asp Asn Ile Pro Thr Pro Glu Arg Glu Ile Asp
 195 200 205
 Lys Pro Phe Leu Met Pro Ile Glu Asp Val Phe Ser Ile Ser Gly Arg
 210 215 220
 Gly Thr Val Val Thr Gly Arg Ile Glu Arg Gly Ile Val Lys Val Ser
 225 230 235 240
 Asp Lys Val Gln Leu Val Gly Leu Gly Glu Thr Lys Glu Thr Ile Val
 245 250 255
 Thr Gly Val Glu Met Phe Arg Lys Glu Leu Pro Glu Gly Arg Ala Gly
 260 265 270
 Glu Asn Val Gly Leu Leu Leu Arg Gly Ile Gly Lys Asn Asp Val Glu
 275 280 285
 Arg Gly Met Val Val Cys Gln Pro Asn Ser Val Lys Pro His Thr Lys
 290 295 300
 Phe Lys Ser Ala Val Tyr Val Leu Gln Lys Glu Glu Gly Gly Arg His
 305 310 315 320
 Lys Pro Phe Phe Ser Gly Tyr Arg Pro Gln Phe Phe Phe Arg Thr Thr
 325 330 335
 Asp Val Thr Gly Val Val Thr Leu Pro Glu Gly Thr Glu Met Val Met
 340 345 350
 Pro Gly Asp Asn Val Glu Leu Asp Val Glu Leu Ile Gly Thr Val Ala
 355 360 365
 Leu Glu Glu Gly Met Arg Phe Ala Ile Arg Glu Gly Gly Arg Thr Ile
 370 375 380
 Gly Ala Gly Thr Ile Ser Lys Ile Asn Ala
 385 390

<210> 69

<211> 476

<212> PRT

<213> Chlamydia pneumoniae

<400> 69

Met Arg Ile Val Gln Val Ala Val Glu Phe Thr Pro Ile Val Lys Val
 5 10 15
 Gly Gly Leu Gly Asp Ala Val Ala Ser Leu Ser Lys Glu Leu Ala Lys
 20 25 30
 Gln Asn Asp Val Glu Val Leu Leu Pro His Tyr Pro Leu Ile Ser Lys
 35 40 45
 Phe Ser Ser Ser Gln Val Leu Ser Glu Arg Ser Phe Tyr Tyr Glu Phe
 50 55 60
 Leu Gly Lys Gln Gln Ala Ser Ala Ile Ser Tyr Ser Tyr Glu Gly Leu
 65 70 75 80

Thr Leu Thr Ile Ile Thr Leu Asp Ser Gln Ile Glu Leu Phe Ser Thr
 85 90 95
 Thr Ser Val Tyr Ser Glu Asn Asn Val Val Arg Phe Ser Ala Phe Ala
 100 105 110
 Ala Ala Ala Ala Tyr Leu Gln Glu Ala Asp Pro Ala Asp Ile Val
 115 120 125
 His Leu His Asp Trp His Val Gly Leu Leu Ala Gly Leu Leu Lys Asn
 130 135 140
 Pro Leu Asn Pro Val His Ser Lys Ile Val Phe Thr Ile His Asn Phe
 145 150 155 160
 Gly Tyr Arg Gly Tyr Cys Ser Thr Gln Leu Leu Ala Ala Ser Gln Ile
 165 170 175
 Asp Asp Phe His Leu Ser His Tyr Gln Leu Phe Arg Asp Pro Gln Thr
 180 185 190
 Ser Val Leu Met Lys Gly Ala Leu Tyr Cys Ser Asp Tyr Ile Thr Thr
 195 200 205
 Val Ser Leu Thr Tyr Val Gln Glu Ile Ile Asn Asp Tyr Ser Asp Tyr
 210 215 220
 Glu Leu His Asp Ala Ile Leu Ala Arg Asn Ser Val Phe Ser Gly Ile
 225 230 235 240
 Ile Asn Gly Ile Asp Glu Asp Val Trp Asn Pro Lys Thr Asp Pro Ala
 245 250 255
 Leu Ala Val Gln Tyr Asp Ala Ser Leu Leu Ser Glu Pro Asp Val Leu
 260 265 270
 Phe Thr Lys Lys Glu Glu Asn Arg Ala Val Leu Tyr Glu Lys Leu Gly
 275 280 285
 Ile Ser Ser Asp Tyr Phe Pro Leu Ile Cys Val Ile Ser Arg Ile Val
 290 295 300
 Glu Glu Lys Gly Pro Glu Phe Met Lys Glu Ile Ile Leu His Ala Met
 305 310 315 320
 Glu His Ser Tyr Ala Phe Ile Leu Ile Gly Thr Ser Gln Asn Glu Val
 325 330 335
 Leu Leu Asn Glu Phe Arg Asn Leu Gln Asp Cys Leu Ala Ser Ser Pro
 340 345 350
 Asn Ile Arg Leu Ile Leu Asp Phe Asn Asp Pro Leu Ala Arg Leu Thr
 355 360 365
 Tyr Ala Ala Ala Asp Met Ile Cys Ile Pro Ser His Arg Glu Ala Cys
 370 375 380
 Gly Leu Thr Gln Leu Ile Ala Met Arg Tyr Gly Thr Val Pro Leu Val
 385 390 395 400
 Arg Lys Thr Gly Gly Leu Ala Asp Thr Val Ile Pro Gly Val Asn Gly
 405 410 415
 Phe Thr Phe Phe Asp Thr Asn Asn Phe Asn Glu Phe Arg Ala Met Leu
 420 425 430
 Ser Asn Ala Val Thr Thr Tyr Arg Gln Glu Pro Asp Val Trp Leu Asn
 435 440 445
 Leu Ile Glu Ser Gly Met Leu Arg Ala Ser Gly Leu Asp Ala Met Ala
 450 455 460
 Lys His Tyr Val Asn Leu Tyr Gln Ser Leu Leu Ser
 465 470 475

<210> 70
 <211> 346
 <212> PRT
 <213> Chlamydia pneumoniae

Met	Glu	Ala	Asp	Ile	Leu	Asp	Gly	Lys	Leu	Lys	Arg	Val	Glu	Val	Ser
				5					10					15	
Lys	Lys	Gly	Leu	Val	Asn	Cys	Asn	Gln	Val	Asp	Val	Asn	Gln	Leu	Val
			20					25					30		
Pro	Ile	Lys	Tyr	Lys	Trp	Ala	Trp	Glu	His	Tyr	Leu	Asn	Gly	Cys	Ala
		35					40					45			
Asn	Asn	Trp	Leu	Pro	Thr	Glu	Val	Pro	Met	Ala	Arg	Asp	Ile	Glu	Leu
	50					55					60				
Trp	Lys	Ser	Asp	Glu	Leu	Ser	Glu	Asp	Glu	Arg	Arg	Val	Ile	Leu	Leu
	65				70					75				80	
Asn	Leu	Gly	Phe	Phe	Ser	Thr	Ala	Glu	Ser	Leu	Val	Gly	Asn	Asn	Ile
				85					90					95	
Val	Leu	Ala	Ile	Phe	Lys	His	Ile	Thr	Asn	Pro	Glu	Ala	Arg	Gln	Tyr
			100					105					110		
Leu	Leu	Arg	Gln	Ala	Phe	Glu	Glu	Ala	Val	His	Thr	His	Thr	Phe	Leu
		115					120					125			
Tyr	Ile	Cys	Glu	Ser	Leu	Gly	Leu	Asp	Glu	Gly	Glu	Val	Phe	Asn	Ala
	130					135					140				
Tyr	Asn	Glu	Arg	Ala	Ser	Ile	Arg	Ala	Lys	Asp	Asp	Phe	Gln	Met	Thr
145					150					155				160	
Leu	Thr	Val	Asp	Val	Leu	Asp	Pro	Asn	Phe	Ser	Val	Gln	Ser	Ser	Glu
				165					170					175	
Gly	Leu	Gly	Gln	Phe	Ile	Lys	Asn	Leu	Val	Gly	Tyr	Tyr	Ile	Ile	Met
			180					185					190		
Glu	Gly	Ile	Phe	Phe	Tyr	Ser	Gly	Phe	Val	Met	Ile	Leu	Ser	Phe	His
		195					200					205			
Arg	Gln	Asn	Lys	Met	Thr	Gly	Ile	Gly	Glu	Gln	Tyr	Gln	Tyr	Ile	Leu
	210					215					220				
Arg	Asp	Glu	Thr	Ile	His	Leu	Asn	Phe	Gly	Ile	Asp	Leu	Ile	Asn	Gly
225					230					235				240	
Ile	Lys	Glu	Glu	Asn	Pro	Glu	Val	Trp	Thr	Thr	Glu	Leu	Gln	Glu	Glu
				245					250					255	
Ile	Val	Ala	Leu	Ile	Glu	Lys	Ala	Val	Glu	Leu	Glu	Ile	Glu	Tyr	Ala
			260					265					270		
Lys	Asp	Cys	Leu	Pro	Arg	Gly	Ile	Leu	Gly	Leu	Arg	Ser	Ser	Met	Phe
		275					280					285			
Ile	Asp	Tyr	Val	Arg	His	Ile	Ala	Asp	Arg	Arg	Leu	Glu	Arg	Ile	Gly
	290					295					300				
Leu	Lys	Pro	Ile	Tyr	His	Ser	Arg	Asn	Pro	Phe	Pro	Trp	Met	Ser	Glu
305					310					315				320	
Thr	Met	Asp	Leu	Asn	Lys	Glu	Lys	Asn	Phe	Phe	Glu	Thr	Arg	Val	Thr
				325										335	
Glu	Tyr	Gln	Thr	Ala	Gly	Asn	Leu	Ser	Trp						
			340					345							

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<210> 71
<211> 1044
<212> PRT
<213> Chlamydia pneumoniae
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<400> 71
Met Val Glu Val Glu Glu Lys His Tyr Thr Ile Val Lys Arg Asn Gly
                    5                      10                      15
Met Phe Val Pro Phe Asn Gln Asp Arg Ile Phe Gln Ala Leu Glu Ala
                20                      25                      30

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Ala Phe Arg Asp Thr Arg Ser Leu Glu Thr Ser Ser Pro Leu Pro Lys
 35 40 45
 Asp Leu Glu Glu Ser Ile Ala Gln Ile Thr His Lys Val Val Lys Glu
 50 55 60
 Val Leu Ala Lys Ile Ser Glu Gly Gln Val Val Thr Val Glu Arg Ile
 65 70 75 80
 Gln Asp Leu Val Glu Ser Gln Leu Tyr Ile Ser Gly Leu Gln Asp Val
 85 90 95
 Ala Arg Asp Tyr Ile Val Tyr Arg Asp Gln Arg Lys Ala Glu Arg Gly
 100 105 110
 Asn Ser Ser Ser Ile Ile Ala Ile Ile Arg Arg Asp Gly Gly Ser Ala
 115 120 125
 Lys Phe Asn Pro Met Lys Ile Ser Ala Ala Leu Glu Lys Ala Phe Arg
 130 135 140
 Ala Thr Leu Gln Ile Asn Gly Met Thr Pro Pro Ala Thr Leu Ser Glu
 145 150 155 160
 Ile Asn Asp Leu Thr Leu Arg Ile Val Glu Asp Val Leu Ser Leu His
 165 170 175
 Gly Glu Glu Ala Ile Asn Leu Glu Glu Ile Gln Asp Ile Val Glu Lys
 180 185 190
 Gln Leu Met Val Ala Gly Tyr Tyr Asp Val Ala Lys Asn Tyr Ile Leu
 195 200 205
 Tyr Arg Glu Ala Arg Ala Arg Ala Asn Lys Asp Gln Asp Gly
 210 215 220
 Gln Glu Glu Phe Val Pro Gln Glu Glu Thr Tyr Val Val Gln Lys Glu
 225 230 235 240
 Asp Gly Thr Thr Tyr Leu Leu Arg Lys Thr Asp Leu Glu Lys Arg Phe
 245 250 255
 Ser Trp Ala Cys Lys Arg Phe Pro Lys Thr Thr Asp Ser Gln Leu Leu
 260 265 270
 Ala Asp Met Ala Phe Met Asn Leu Tyr Ser Gly Ile Lys Glu Asp Glu
 275 280 285
 Val Thr Thr Ala Cys Ile Met Ala Ala Arg Ala Asn Ile Glu Arg Glu
 290 295 300
 Pro Asp Tyr Ala Phe Ile Ala Ala Glu Leu Leu Thr Ser Ser Leu Tyr
 305 310 315 320
 Glu Glu Thr Leu Gly Cys Ser Ser Gln Asp Pro Asn Leu Ser Glu Ile
 325 330 335
 His Lys Lys His Phe Lys Glu Tyr Ile Leu Asn Gly Glu Glu Tyr Arg
 340 345 350
 Leu Asn Pro Gln Leu Lys Asp Tyr Asp Leu Asp Ala Leu Ser Glu Val
 355 360 365
 Leu Asp Leu Ser Arg Asp Gln Gln Phe Ser Tyr Met Gly Val Gln Asn
 370 375 380
 Leu Tyr Asp Arg Tyr Phe Asn Leu His Glu Gly Arg Arg Leu Glu Thr
 385 390 395 400
 Ala Gln Ile Phe Trp Met Arg Val Ser Met Gly Leu Ala Leu Asn Glu
 405 410 415
 Gly Glu Gln Lys Asn Phe Trp Ala Ile Thr Phe Tyr Asn Leu Leu Ser
 420 425 430
 Thr Phe Arg Tyr Thr Pro Ala Thr Pro Thr Leu Phe Asn Ser Gly Met
 435 440 445
 Arg His Ser Gln Leu Ser Ser Cys Tyr Leu Ser Thr Val Lys Asp Asp
 450 455 460
 Leu Ser His Ile Tyr Lys Val Ile Ser Asp Asn Ala Leu Leu Ser Lys
 465 470 475 480
 Trp Ala Gly Gly Ile Gly Asn Asp Trp Thr Asp Val Arg Ala Thr Gly

485 490 495
 Ala Val Ile Lys Gly Thr Asn Gly Lys Ser Gln Gly Val Ile Pro Phe
 500 505 510
 Ile Lys Val Ala Asn Asp Thr Ala Ile Ala Val Asn Gln Gly Gly Lys
 515 520 525
 Arg Lys Gly Ala Met Cys Val Tyr Leu Glu Asn Trp His Leu Asp Tyr
 530 535 540
 Glu Asp Phe Leu Glu Leu Arg Lys Asn Thr Gly Asp Glu Arg Arg Arg
 545 550 555 560
 Thr His Asp Ile Asn Thr Ala Ser Trp Ile Pro Asp Leu Phe Phe Lys
 565 570 575
 Arg Leu Glu Lys Lys Gly Met Trp Thr Leu Phe Ser Pro Asp Asp Val
 580 585 590
 Pro Gly Leu His Glu Ala Tyr Gly Leu Glu Phe Glu Lys Leu Tyr Glu
 595 600 605
 Glu Tyr Glu Arg Lys Val Glu Ser Gly Glu Ile Arg Leu Tyr Lys Lys
 610 615 620
 Val Glu Ala Glu Val Leu Trp Arg Lys Met Leu Ser Met Leu Tyr Glu
 625 630 635 640
 Thr Gly His Pro Trp Ile Thr Phe Lys Asp Pro Ser Asn Ile Arg Ser
 645 650 655
 Asn Gln Asp His Val Gly Val Val Arg Cys Ser Asn Leu Cys Thr Glu
 660 665 670
 Ile Leu Leu Asn Cys Ser Glu Ser Glu Thr Ala Val Cys Asn Leu Gly
 675 680 685
 Ser Ile Asn Leu Val Glu His Ile Arg Asn Asp Lys Leu Asp Glu Glu
 690 695 700
 Lys Leu Lys Glu Thr Ile Ser Ile Ala Ile Arg Ile Leu Asp Asn Val
 705 710 715 720
 Ile Asp Leu Asn Phe Tyr Pro Thr Pro Glu Ala Lys Gln Ala Asn Leu
 725 730 735
 Thr His Arg Ala Val Gly Leu Gly Val Met Gly Phe Gln Asp Val Leu
 740 745 750
 Tyr Glu Leu Asn Ile Ser Tyr Ala Ser Gln Glu Ala Val Glu Phe Ser
 755 760 765
 Asp Glu Cys Ser Glu Ile Ile Ala Tyr Tyr Ala Ile Leu Ala Ser Ser
 770 775 780
 Leu Leu Ala Lys Glu Arg Gly Thr Tyr Ala Ser Tyr Ser Gly Ser Lys
 785 790 795 800
 Trp Asp Arg Gly Tyr Leu Pro Leu Asp Thr Ile Glu Leu Leu Lys Glu
 805 810 815
 Thr Arg Gly Glu His Asn Val Leu Val Asp Thr Ser Ser Lys Lys Asp
 820 825 830
 Trp Thr Pro Val Arg Asp Thr Ile Gln Lys Tyr Gly Met Arg Asn Ser
 835 840 845
 Gln Val Met Ala Ile Ala Pro Thr Ala Thr Ile Ser Asn Ile Ile Gly
 850 855 860
 Val Thr Gln Ser Ile Glu Pro Met Tyr Lys His Leu Phe Val Lys Ser
 865 870 875 880
 Asn Leu Ser Gly Glu Phe Thr Ile Pro Asn Thr Tyr Leu Ile Lys Lys
 885 890 895
 Leu Lys Glu Leu Gly Leu Trp Asp Ala Glu Met Leu Asp Asp Leu Lys
 900 905 910
 Tyr Phe Asp Gly Ser Leu Leu Glu Ile Glu Arg Ile Pro Asn His Leu
 915 920 925
 Lys Lys Leu Phe Leu Thr Ala Phe Glu Ile Glu Pro Glu Trp Ile Ile
 930 935 940


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<210> 72
<211> 461
<212> PRT
<213> Chlamydia pneumoniae
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<400>	72														
Met	Met	Ser	Ser	Lys	Arg	Thr	Ser	Lys	Ile	Ala	Val	Leu	Ser	Ile	Leu
				5					10					15	
Leu	Thr	Phe	Thr	His	Ser	Ile	Gly	Phe	Ala	Asn	Ala	Asn	Ser	Ser	Val
			20					25					30		
Gly	Leu	Gly	Thr	Val	Tyr	Ile	Thr	Ser	Glu	Val	Val	Lys	Lys	Pro	Gln
		35					40					45			
Lys	Gly	Ser	Glu	Arg	Lys	Gln	Ala	Lys	Lys	Glu	Pro	Arg	Ala	Arg	Lys
	50					55					60				
Gly	Tyr	Leu	Val	Pro	Ser	Ser	Arg	Thr	Leu	Ser	Ala	Arg	Ala	Gln	Lys
	65				70					75				80	
Met	Lys	Asn	Ser	Ser	Arg	Lys	Glu	Ser	Ser	Gly	Gly	Cys	Asn	Glu	Ile
				85					90					95	
Ser	Ala	Asn	Ser	Thr	Pro	Arg	Ser	Val	Lys	Leu	Arg	Arg	Asn	Lys	Arg
			100					105					110		
Ala	Glu	Gln	Lys	Ala	Ala	Lys	Gln	Gly	Phe	Ser	Ala	Phe	Ser	Asn	Leu
			115				120					125			
Thr	Leu	Lys	Ser	Leu	Leu	Pro	Lys	Leu	Pro	Ser	Lys	Gln	Lys	Thr	Ser
	130					135					140				
Ile	His	Glu	Arg	Glu	Lys	Ala	Thr	Ser	Arg	Phe	Val	Asn	Glu	Ser	Gln
145					150					155					160
Leu	Ser	Ser	Ala	Arg	Lys	Arg	Tyr	Cys	Thr	Pro	Ser	Ser	Ala	Ala	Pro
				165					170					175	
Ser	Leu	Phe	Leu	Glu	Thr	Glu	Ile	Val	Arg	Ala	Pro	Val	Glu	Arg	Thr
			180					185					190		
Lys	Glu	Leu	Gln	Asp	Asn	Glu	Ile	His	Ile	Pro	Val	Val	Gln	Val	Gln
		195				200						205			
Thr	Asn	Pro	Lys	Glu	Gln	Asn	Thr	Lys	Thr	Thr	Lys	Gln	Leu	Ala	Ser
	210					215					220				
Gln	Ala	Ser	Ile	Gln	Gln	Ser	Glu	Gly	Thr	Glu	Gln	Ser	Leu	Arg	Glu
225					230					235					240
Leu	Ala	Gln	Gly	Ala	Ser	Leu	Pro	Val	Leu	Val	Arg	Ser	Asn	Pro	Glu
				245					250					255	
Val	Ser	Val	Gln	Arg	Gln	Lys	Glu	Glu	Leu	Leu	Lys	Glu	Leu	Val	Ala
			260					265					270		
Glu	Arg	Arg	Gln	Cys	Lys	Arg	Lys	Ser	Val	Arg	Gln	Ala	Leu	Glu	Ala

275 280 285
 Arg Ser Leu Thr Lys Lys Val Ala Arg Gly Gly Ser Val Thr Ser Thr
 290 295 300
 Leu Arg Tyr Asp Pro Glu Lys Ala Ala Glu Ile Lys Ser Arg Arg Asn
 305 310 315 320
 Cys Lys Val Ser Pro Glu Ala Arg Glu Gln Lys Tyr Ser Ser Cys Lys
 325 330 335
 Arg Asp Ala Arg Ala Asn Gly Lys Gln Asp Lys Thr Thr Pro Ser Glu
 340 345 350
 Asp Ala Ser Gln Glu Glu Gln Gln Thr Gly Ala Gly Leu Val Arg Lys
 355 360 365
 Thr Pro Lys Ser Gln Val Ala Ser Asn Ala Gln Asn Phe Tyr Arg Asn
 370 375 380
 Ser Lys Asn Thr Asn Ile Asp Ser Tyr Leu Thr Ala Asn Gln Tyr Ser
 385 390 395 400
 Cys Ser Ser Glu Glu Thr Asp Trp Pro Cys Ser Ser Cys Val Ser Lys
 405 410 415
 Arg Arg Thr His Asn Ser Ile Ser Val Cys Thr Met Val Val Thr Val
 420 425 430
 Ile Ala Met Ile Val Gly Ala Leu Ile Ile Ala Asn Ala Thr Glu Ser
 435 440 445
 Gln Thr Thr Ser Asp Pro Thr Pro Pro Thr Pro Thr Pro
 450 455 460

<210> 73
 <211> 576
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 73
 Met Thr Asp Phe Pro Thr His Phe Lys Gly Pro Lys Leu Asn Pro Ile
 5 10 15
 Lys Val Asn Pro Asn Phe Phe Glu Arg Asn Pro Lys Val Ala Arg Val
 20 25 30
 Leu Gln Ile Thr Ala Val Val Leu Gly Ile Ile Ala Leu Leu Ser Gly
 35 40 45
 Ile Val Leu Ile Ile Gly Thr Pro Leu Gly Ala Pro Ile Ser Met Ile
 50 55 60
 Leu Gly Gly Cys Leu Leu Ala Ser Gly Gly Ala Leu Phe Val Gly Gly
 65 70 75 80
 Thr Ile Ala Thr Ile Leu Gln Ala Arg Asn Ser Tyr Lys Lys Ala Val
 85 90 95
 Asn Gln Lys Lys Leu Ser Glu Pro Leu Met Glu Arg Pro Glu Leu Lys
 100 105 110
 Ala Leu Asp Tyr Ser Leu Asp Leu Lys Glu Val Trp Asp Leu His His
 115 120 125
 Ser Val Val Lys His Leu Lys Lys Leu Asp Leu Asn Leu Ser Lys Thr
 130 135 140
 Gln Arg Glu Val Leu Asn Gln Ile Lys Ile Asp Asp Glu Gly Pro Ser
 145 150 155 160
 Leu Gly Glu Cys Ala Ala Met Ile Ser Glu Asn Tyr Asp Ala Cys Leu
 165 170 175
 Lys Met Leu Ala Tyr Arg Glu Glu Leu Leu Lys Glu Gln Thr Gln Tyr
 180 185 190
 Gln Glu Thr Arg Phe Asn Gln Asn Leu Thr His Arg Asn Lys Val Leu
 195 200 205

Leu Ser Ile Leu Ser Arg Ile Thr Asp Asn Ile Ser Lys Ala Gly Gly
 210 215 220
 Val Phe Ser Leu Lys Phe Ser Thr Leu Ser Ser Arg Met Ser Arg Ile
 225 230 235 240
 His Thr Thr Thr Thr Val Ile Leu Ala Leu Ser Ala Val Val Ser Val
 245 250 255
 Met Val Val Ala Ala Leu Ile Pro Gly Gly Ile Leu Ala Leu Pro Ile
 260 265 270
 Leu Leu Ala Val Ala Ile Ser Ala Gly Val Ile Val Thr Gly Leu Ser
 275 280 285
 Tyr Leu Val Arg Gln Ile Leu Ser Asn Thr Lys Arg Asn Arg Gln Asp
 290 295 300
 Phe Tyr Lys Asp Phe Val Lys Asn Val Asp Ile Glu Leu Leu Asn Gln
 305 310 315 320
 Thr Val Thr Leu Gln Arg Phe Leu Phe Glu Met Leu Lys Gly Val Leu
 325 330 335
 Lys Glu Glu Glu Glu Val Ser Leu Glu Gly Gln Asp Trp Tyr Thr Gln
 340 345 350
 Tyr Ile Thr Asn Ala Pro Ile Glu Lys Arg Leu Ile Glu Glu Ile Arg
 355 360 365
 Val Thr Tyr Lys Glu Ile Asp Ala Gln Thr Lys Lys Met Lys Thr Asp
 370 375 380
 Leu Glu Phe Leu Glu Asn Glu Val Arg Ser Gly Arg Leu Ser Val Ala
 385 390 395 400
 Ser Pro Ser Glu Asp Pro Ser Glu Thr Pro Ile Phe Thr Gln Gly Lys
 405 410 415
 Glu Phe Ala Lys Leu Arg Arg Gln Thr Ser Gln Asn Ile Ser Thr Ile
 420 425 430
 Tyr Gly Pro Asp Asn Glu Asn Ile Asp Pro Glu Phe Ser Leu Pro Trp
 435 440 445
 Met Pro Lys Lys Glu Glu Glu Ile Asp His Ser Leu Glu Pro Val Thr
 450 455 460
 Lys Leu Glu Pro Gly Ser Arg Glu Glu Leu Leu Leu Val Glu Gly Val
 465 470 475 480
 Asn Pro Thr Leu Arg Glu Leu Asn Met Arg Ile Ala Leu Leu Gln Gln
 485 490 495
 Gln Leu Ser Ser Val Arg Lys Trp Arg His Pro Arg Gly Glu His Tyr
 500 505 510
 Gly Asn Val Ile Tyr Ser Asp Thr Glu Leu Asp Arg Ile Gln Met Leu
 515 520 525
 Glu Gly Ala Phe Tyr Asn His Leu Arg Glu Ala Gln Glu Glu Ile Thr
 530 535 540
 Gln Ser Leu Gly Asp Leu Val Asp Ile Gln Asn Arg Ile Leu Gly Ile
 545 550 555 560
 Ile Val Glu Gly Asp Ser Asp Ser Arg Thr Glu Glu Glu Pro Gln Glu
 565 570 575

<210> 74
 <211> 361
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 74
 Met Gln Gln Thr Val Ile Val Ala Met Ser Gly Gly Val Asp Ser Ser
 5 10 15
 Val Val Ala Tyr Leu Phe Lys Lys Phe Thr Asn Tyr Lys Val Ile Gly

20 25 30
 Leu Phe Met Lys Asn Trp Glu Glu Asp Ser Glu Gly Gly Leu Cys Ser
 35 40 45
 Ser Thr Lys Asp Tyr Glu Asp Val Glu Arg Val Cys Leu Gln Leu Asp
 50 55 60
 Ile Pro Tyr Tyr Thr Val Ser Phe Ala Lys Glu Tyr Arg Glu Arg Val
 65 70 75 80
 Phe Ala Arg Phe Leu Lys Glu Tyr Ser Leu Gly Tyr Thr Pro Asn Pro
 85 90 95
 Asp Ile Leu Cys Asn Arg Glu Ile Lys Phe Asp Leu Leu Gln Lys Lys
 100 105 110
 Val Gln Glu Leu Gly Gly Asp Tyr Leu Ala Thr Gly His Tyr Cys Arg
 115 120 125
 Leu Asn Thr Glu Leu Gln Glu Thr Gln Leu Leu Arg Gly Cys Asp Pro
 130 135 140
 Gln Lys Asp Gln Ser Tyr Phe Leu Ser Gly Thr Pro Lys Ser Ala Leu
 145 150 155 160
 His Asn Val Leu Phe Pro Leu Gly Glu Met Asn Lys Thr Glu Val Arg
 165 170 175
 Ala Ile Ala Ala Gln Ala Ala Leu Pro Thr Ala Glu Lys Lys Asp Ser
 180 185 190
 Thr Gly Ile Cys Phe Ile Gly Lys Arg Pro Phe Lys Glu Phe Leu Glu
 195 200 205
 Lys Phe Leu Pro Asn Lys Thr Gly Asn Val Ile Asp Trp Asp Thr Lys
 210 215 220
 Glu Ile Val Gly Gln His Gln Gly Ala His Tyr Tyr Thr Ile Gly Gln
 225 230 235 240
 Arg Arg Gly Leu Asp Leu Gly Gly Ser Glu Lys Pro Cys Tyr Val Val
 245 250 255
 Gly Lys Asn Ile Glu Glu Asn Ser Ile Tyr Ile Val Arg Gly Glu Asp
 260 265 270
 His Pro Gln Leu Tyr Leu Arg Glu Leu Thr Ala Arg Glu Leu Asn Trp
 275 280 285
 Phe Thr Pro Pro Lys Ser Gly Cys His Cys Ser Ala Lys Val Arg Tyr
 290 295 300
 Arg Ser Pro Asp Glu Ala Cys Thr Ile Asp Tyr Ser Ser Gly Asp Glu
 305 310 315 320
 Val Lys Val Arg Phe Ser Gln Pro Val Lys Ala Val Thr Pro Gly Gln
 325 330 335
 Thr Ile Ala Phe Tyr Gln Gly Asp Thr Cys Leu Gly Ser Gly Val Ile
 340 345 350
 Asp Val Pro Met Ile Pro Ser Glu Gly
 355 360

<210> 75
 <211> 1609
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 75
 Met Val Ala Lys Lys Thr Val Arg Ser Tyr Arg Ser Ser Phe Ser His
 5 10 15
 Ser Val Ile Val Ala Ile Leu Ser Ala Gly Ile Ala Phe Glu Ala His
 20 25 30
 Ser Leu His Ser Ser Glu Leu Asp Leu Gly Val Phe Asn Lys Gln Phe
 35 40 45

Glu	Glu	His	Ser	Ala	His	Val	Glu	Glu	Ala	Gln	Thr	Ser	Val	Leu	Lys
	50					55					60				
Gly	Ser	Asp	Pro	Val	Asn	Pro	Ser	Gln	Lys	Glu	Ser	Glu	Lys	Val	Leu
65					70					75					80
Tyr	Thr	Gln	Val	Pro	Leu	Thr	Gln	Gly	Ser	Ser	Gly	Glu	Ser	Leu	Asp
				85					90					95	
Leu	Ala	Asp	Ala	Asn	Phe	Leu	Glu	His	Phe	Gln	His	Leu	Phe	Glu	Glu
			100					105					110		
Thr	Thr	Val	Phe	Gly	Ile	Asp	Gln	Lys	Leu	Val	Trp	Ser	Asp	Leu	Asp
		115					120					125			
Thr	Arg	Asn	Phe	Ser	Gln	Pro	Thr	Gln	Glu	Pro	Asp	Thr	Ser	Asn	Ala
	130					135					140				
Val	Ser	Glu	Lys	Ile	Ser	Ser	Asp	Thr	Lys	Glu	Asn	Arg	Lys	Asp	Leu
145					150					155					160
Glu	Thr	Glu	Asp	Pro	Ser	Lys	Lys	Ser	Gly	Leu	Lys	Glu	Val	Ser	Ser
				165					170					175	
Asp	Leu	Pro	Lys	Ser	Pro	Glu	Thr	Ala	Val	Ala	Ala	Ile	Ser	Glu	Asp
			180					185					190		
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Ser	Ser	Phe	Gln	Gly	Ile	Ile	Phe	Ser	Gly	Ser	Gly	Ala	Asn	Ser	Gly
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Leu	Gly	Phe	Glu	Asn	Leu	Lys	Ala	Pro	Lys	Ser	Gly	Ala	Ala	Val	Tyr
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Ser	Asp	Arg	Asp	Ile	Val	Phe	Glu	Asn	Leu	Val	Lys	Gly	Leu	Ser	Phe
			260					265					270		
Ile	Ser	Cys	Glu	Ser	Leu	Glu	Asp	Gly	Ser	Ala	Ala	Gly	Val	Asn	Ile
		275					280					285			
Val	Val	Thr	His	Cys	Gly	Asp	Val	Thr	Leu	Thr	Asp	Cys	Ala	Thr	Gly
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Ala	Val	Phe	Thr	Ala	Arg	Asn	His	Glu	Val	Gln	Asn	Asn	Leu	Ala	Gly
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Gly	Ile	Leu	Ser	Val	Val	Gly	Asn	Lys	Gly	Ala	Ile	Val	Val	Glu	Lys
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Val	Tyr	Ser	Asn	Asn	Glu	Asn	Thr	Ala	Leu	Trp	Lys	Glu	Asn	Gln	Ala
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Asn	Cys	Ser													

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Lys	Asp	Ser	Gly	Glu	Asn	Ile	Asn	Ile	Ile	Gly	Asn	Ser	Gly	Ala	Ile																																						
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Thr	Phe	Leu	Lys	Asn	Lys	Ala	Ser	Val	Leu	Glu	Val	Met	Thr	Gln	Ala																																						
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Glu	Asp	Tyr	Ala	Gly	Gly	Gly	Ala	Leu	Trp	Gly	His	Asn	Val	Leu	Leu																																						
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Asp	Ser	Asn	Ser	Gly	Asn	Ile	Gln	Phe	Ile	Gly	Asn	Ile	Gly	Gly	Ser																																						
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Thr	Phe	Trp	Ile	Gly	Glu	Tyr	Val	Gly	Gly	Gly	Ala	Ile	Leu	Ser	Thr																																						
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Asp	Arg	Val	Thr	Ile	Ser	Asn	Asn	Ser	Gly	Asp	Val	Val	Phe	Lys	Gly																																						
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Asn	Lys	Gly	Gln	Cys	Leu	Ala	Gln	Lys	Tyr	Val	Ala	Pro	Gln	Glu	Thr																																						
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Ala	Pro	Val	Glu	Ser	Asp	Ala	Ser	Ser	Thr	Asn	Lys	Asp	Glu	Lys	Ser																																						
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Leu	Asn	Ala	Cys	Ser	His	Gly	Asp	His	Tyr	Pro	Pro	Lys	Thr	Val	Glu																																						
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Glu	Glu	Val	Pro	Pro	Ser	Leu	Leu	Glu	Glu	His	Pro	Val	Val	Ser	Ser																																						
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Thr	Asp	Ile	Arg	Gly	Gly	Gly	Ala	Ile	Leu	Ala	Gln	His	Ile	Phe	Ile																																						
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Thr	Asp	Asn	Thr	Gly	Asn	Leu	Arg	Phe	Ser	Gly	Asn	Leu	Gly	Gly	Gly																																						
		705																	710																	715																	720
Glu	Glu	Ser	Ser	Thr	Val	Gly	Asp	Leu	Ala	Ile	Val	Gly	Gly	Gly	Ala																																						
		725																	730																	735																	740
Leu	Leu	Ser	Thr	Asn	Glu	Val	Asn	Val	Cys	Ser	Asn	Gln	Asn	Val	Val																																						
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Phe	Ser	Asp	Asn	Val	Thr	Ser	Asn	Gly	Cys	Asp	Ser	Gly	Gly	Ala	Ile																																						
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Leu	Ala	Lys	Lys	Val	Asp	Ile	Ser	Ala	Asn	His	Ser	Val	Glu	Phe	Val																																						
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Ser	Asn	Gly	Ser	Gly	Lys	Phe	Gly	Gly	Ala	Val	Cys	Ala	Leu	Asn	Glu																																						
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Ser	Val	Asn	Ile	Thr	Asp	Asn	Gly	Ser	Ala	Val	Ser	Phe	Ser	Lys	Asn																																						
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Arg	Thr	Arg	Leu	Gly	Gly	Ala	Gly	Val	Ala	Ala	Pro	Gln	Gly	Ser	Val																																						
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Thr	Ile	Cys	Gly	Asn	Gln	Gly</																																															

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 Glu Ala Phe Gly Gly Asp Ile Leu Phe Glu Gly Asn Ile Asn Phe Asp
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 Gly Ser Phe Asn Ala Ile His Leu Cys Gly Asn Asp Ser Lys Ile Val
 995 1000 1005
 Glu Leu Ser Ala Val Gln Asp Lys Asn Ile Ile Phe Gln Asp Ala Ile
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 Leu Asp Phe Ser Thr Asn Val Trp Gly Ser Gly Leu Gly Val Val Glu
 1330 1335 1340
 Asp Cys Gln Asn Ile Gly Glu Phe Asp Gly Phe Lys His His Leu Thr
 1345 1350 1355 1360
 Gly Tyr Ala Leu Gly Leu Asp Thr Gln Leu Val Glu Asp Phe Leu Ile
 1365 1370 1375
 Gly Gly Cys Phe Ser Gln Phe Phe Gly Lys Thr Glu Ser Gln Ser Tyr
 1380 1385 1390
 Lys Ala Lys Asn Asp Val Lys Ser Tyr Met Gly Ala Ala Tyr Ala Gly
 1395 1400 1405
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 Val Val Pro Phe Val Glu Ala Glu Tyr Val Arg Ile Asp Leu Pro Glu
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 Ile Ser Glu Gln Gly Lys Glu Val Arg Thr Phe Gln Lys Thr Arg Phe
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 1540 1545 1550
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 1555 1560 1565
 Lys Ala Arg Leu Ser Asn Asn Thr Glu Trp Asn Ser Tyr Leu Ser Thr
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 1585 1590 1595 1600
 Phe Asn Gly Gly Ile Arg Ile Ile Phe
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 <212> PRT
 <213> Chlamydia pneumoniae

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 Gly Lys Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe Thr Tyr Val
 35 40 45
 Cys Pro Thr Glu Leu His Ala Phe Gln Asp Ala Leu Gly Glu Phe His
 50 55 60
 Thr Arg Gly Ala Glu Val Ile Gly Cys Ser Val Asp Asp Ile Ala Thr
 65 70 75 80
 His Gln Gln Trp Leu Ala Thr Lys Lys Lys Gln Gly Gly Ile Glu Gly
 85 90 95
 Ile Thr Tyr Pro Leu Leu Ser Asp Glu Asp Lys Val Ile Ser Arg Ser
 100 105 110
 Tyr His Val Leu Lys Pro Glu Glu Glu Leu Ser Phe Arg Gly Val Phe
 115 120 125
 Leu Ile Asp Lys Gly Gly Ile Ile Arg His Leu Val Val Asn Asp Leu
 130 135 140
 Pro Leu Gly Arg Ser Ile Glu Glu Glu Leu Arg Thr Leu Asp Ala Leu
 145 150 155 160
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 Gly Glu Arg Ala Met Ala Pro Asn Glu Glu Gly Leu Gln Asn Tyr Phe
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<211> 619
<212> PRT
<213> Chlamydia pneumoniae
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Gln	Asp	Leu	Asn	Val	Ile	Glu	His	Leu	Ile	Ser	Leu	Lys	Tyr	Ala	Pro	
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Leu	Pro	Trp	Lys	Glu	Leu	Leu	Phe	Gly	Trp	Asp	Leu	Ser	Gln	Gln	Thr	
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Gln	Gln	Ala	Arg	Leu	Gln	Leu	Val	Leu	Glu	Glu	Lys	Pro	Thr	Thr	Asn	
	65				70					75					80	
Tyr	Cys	Gln	Lys	Val	Leu	Ser	Asn	Tyr	Val	Arg	Ser	Leu	Asn	Asp	Tyr	
				85					90					95		
His	Ala	Gly	Ile	Thr	Phe	Tyr	Arg	Thr	Glu	Ser	Ala	Tyr	Ile	Pro	Tyr	
			100					105					110			
Val	Leu	Lys	Leu	Ser	Glu	Asp	Gly	His	Val	Phe	Val	Val	Asp	Val	Gln	
		115					120					125				
Thr	Ser	Gln	Gly	Asp	Ile	Tyr	Leu	Gly	Asp	Glu	Ile	Leu	Glu	Val	Asp	
	130					135					140					
Gly	Met	Gly	Ile	Arg	Glu	Ala	Ile	Glu	Ser	Leu	Arg	Phe	Gly	Arg	Gly	
	145				150					155					160	
Ser	Ala	Thr	Asp	Tyr	Ser	Ala	Ala	Val	Arg	Ser	Leu	Thr	Ser	Arg	Ser	
				165					170					175		
Ala	Ala	Phe	Gly	Asp	Ala	Val	Pro	Ser	Gly	Ile	Ala	Met	Leu	Lys	Leu	
			180					185					190			
Arg	Arg	Pro	Ser	Gly	Leu	Ile	Arg	Ser	Thr	Pro	Val	Arg	Trp	Arg	Tyr	
		195					200					205				
Thr	Pro	Glu	His	Ile	Gly	Asp	Phe	Ser	Leu	Val	Ala	Pro	Leu	Ile	Pro	
	210					215					220					
Glu	His	Lys	Pro	Gln	Leu	Pro	Thr	Gln	Ser	Cys	Val	Leu	Phe	Arg	Ser	
	225				230					235					240	
Gly	Val	Asn	Ser	Gln	Ser	Ser	Ser	Ser	Ser	Leu	Phe	Ser	Ser	Tyr	Met	
				245					250					255		
Val	Pro	Tyr	Phe	Trp	Glu	Glu	Leu	Arg	Val	Gln	Asn	Lys	Gln	Arg	Phe	
			260					265					270			
Asp	Ser	Asn	His	His	Ile	Gly	Ser	Arg	Asn	Gly	Phe	Leu	Pro	Thr	Phe	
		275					280					285				
Gly	Pro	Ile	Leu	Trp	Glu	Gln	Asp	Lys	Gly	Pro	Tyr	Arg	Ser	Tyr	Ile	
	290					295					300					
Phe	Lys	Ala	Lys	Asp	Ser	Gln	Gly	Asn	Pro	His	Arg	Ile	Gly	Phe	Leu	
	305				310					315					320	
Arg	Ile	Ser	Ser	Tyr	Val	Trp	Thr	Asp	Leu	Glu	Gly	Leu	Glu	Glu	Asp	
				325					330							

370 375 380
 Pro Leu Asp Thr Pro Lys His Arg Met Ile Phe Thr Gln Asp Glu Val
 385 390 395 400
 Ser Ser Ala Leu His Trp Gln Asp Leu Leu Glu Asp Val Phe Thr Asp
 405 410 415
 Glu Gln Ala Val Ala Val Leu Gly Glu Thr Met Glu Gly Tyr Cys Met
 420 425 430
 Asp Met His Ala Val Ala Ser Leu Gln Asn Phe Ser Gln Ser Val Leu
 435 440 445
 Ser Ser Trp Val Ser Gly Asp Ile Asn Leu Ser Lys Pro Met Pro Leu
 450 455 460
 Leu Gly Phe Ala Gln Val Arg Pro His Pro Lys His Gln Tyr Thr Lys
 465 470 475 480
 Pro Leu Phe Met Leu Ile Asp Glu Asp Asp Phe Ser Cys Gly Asp Leu
 485 490 495
 Ala Pro Ala Ile Leu Lys Asp Asn Gly Arg Ala Thr Leu Ile Gly Lys
 500 505 510
 Pro Thr Ala Gly Ala Gly Gly Phe Val Phe Gln Val Thr Phe Pro Asn
 515 520 525
 Arg Ser Gly Ile Lys Gly Leu Ser Leu Thr Gly Ser Leu Ala Val Arg
 530 535 540
 Lys Asp Gly Glu Phe Ile Glu Asn Leu Gly Val Ala Pro His Ile Asp
 545 550 555 560
 Leu Gly Phe Thr Ser Arg Asp Leu Gln Thr Ser Arg Phe Thr Asp Tyr
 565 570 575
 Val Glu Ala Val Lys Thr Ile Val Leu Thr Ser Leu Ser Glu Asn Ala
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 <211> 651
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<400> 78
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 Lys Ser Ala Glu Ala Gln Arg Ile Ala Gly Ala Glu Ala Lys Pro Lys
 35 40 45
 Glu Ser Lys Thr Asp Ser Val Glu Arg Trp Ser Ile Leu Arg Ser Ala
 50 55 60
 Val Asn Ala Leu Met Ser Leu Ala Asp Lys Leu Gly Ile Ala Ser Ser
 65 70 75 80
 Asn Ser Ser Ser Ser Thr Ser Arg Ser Ala Asp Val Asp Ser Thr Thr
 85 90 95
 Ala Thr Ala Pro Thr Pro Pro Pro Thr Phe Asp Asp Tyr Lys Thr
 100 105 110
 Gln Ala Gln Thr Ala Tyr Asp Thr Ile Phe Thr Ser Thr Ser Leu Ala
 115 120 125
 Asp Ile Gln Ala Ala Leu Val Ser Leu Gln Asp Ala Val Thr Asn Ile
 130 135 140

Lys Asp Thr Ala Ala Thr Asp Glu Glu Thr Ala Ile Ala Ala Glu Trp
 145 150 155 160
 Glu Thr Lys Asn Ala Asp Ala Val Lys Val Gly Ala Gln Ile Thr Glu
 165 170 175
 Leu Ala Lys Tyr Ala Ser Asp Asn Gln Ala Ile Leu Asp Ser Leu Gly
 180 185 190
 Lys Leu Thr Ser Phe Asp Leu Leu Gln Ala Ala Leu Leu Gln Ser Val
 195 200 205
 Ala Asn Asn Asn Lys Ala Ala Glu Leu Leu Lys Glu Met Gln Asp Asn
 210 215 220
 Pro Val Val Pro Gly Lys Thr Pro Ala Ile Ala Gln Ser Leu Val Asp
 225 230 235 240
 Gln Thr Asp Ala Thr Ala Thr Gln Ile Glu Lys Asp Gly Asn Ala Ile
 245 250 255
 Arg Asp Ala Tyr Phe Ala Gly Gln Asn Ala Ser Gly Ala Val Glu Asn
 260 265 270
 Ala Lys Ser Asn Asn Ser Ile Ser Asn Ile Asp Ser Ala Lys Ala Ala
 275 280 285
 Ile Ala Thr Ala Lys Thr Gln Ile Ala Glu Ala Gln Lys Lys Phe Pro
 290 295 300
 Asp Ser Pro Ile Leu Gln Glu Ala Glu Gln Met Val Ile Gln Ala Glu
 305 310 315 320
 Lys Asp Leu Lys Asn Ile Lys Pro Ala Asp Gly Ser Asp Val Pro Asn
 325 330 335
 Pro Gly Thr Thr Val Gly Gly Ser Lys Gln Gln Gly Ser Ser Ile Gly
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 Ser Ile Arg Val Ser Met Leu Leu Asp Asp Ala Glu Asn Glu Thr Ala
 355 360 365
 Ser Ile Leu Met Ser Gly Phe Arg Gln Met Ile His Met Phe Asn Thr
 370 375 380
 Glu Asn Pro Asp Ser Gln Ala Ala Gln Gln Glu Leu Ala Ala Gln Ala
 385 390 395 400
 Arg Ala Ala Lys Ala Ala Gly Asp Asp Ser Ala Ala Ala Ala Leu Ala
 405 410 415
 Asp Ala Gln Lys Ala Leu Glu Ala Ala Leu Gly Lys Ala Gly Gln Gln
 420 425 430
 Gln Gly Ile Leu Asn Ala Leu Gly Gln Ile Ala Ser Ala Ala Val Val
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 Ser Ala Gly Val Pro Pro Ala Ala Ala Ser Ser Ile Gly Ser Ser Val
 450 455 460
 Lys Gln Leu Tyr Lys Thr Ser Lys Ser Thr Gly Ser Asp Tyr Lys Thr
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 Gln Ile Ser Ala Gly Tyr Asp Ala Tyr Lys Ser Ile Asn Asp Ala Tyr
 485 490 495
 Gly Arg Ala Arg Asn Asp Ala Thr Arg Asp Val Ile Asn Asn Val Ser
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 Thr Pro Ala Leu Thr Arg Ser Val Pro Arg Ala Arg Thr Glu Ala Arg
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 Gly Pro Glu Lys Thr Asp Gln Ala Leu Ala Arg Val Ile Ser Gly Asn
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 Ser Arg Thr Leu Gly Asp Val Tyr Ser Gln Val Ser Ala Leu Gln Ser
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 Val Met Gln Ile Ile Gln Ser Asn Pro Gln Ala Asn Asn Glu Glu Ile
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<212> PRT
<213> Chlamydia pneumoniae
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<212> DNA
<213> Chlamydia trachomatis serovar D
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<210> 81

<211> 1038

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 81

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<211> 3159

<212> DNA

<400> 82

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 <211> 4593
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<211> 1422

<212> DNA

<213> *Chlamydia trachomatis* serovar D

<400> 84

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<210> 85
 <211> 1179
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 85
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<210> 86
 <211> 585
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 86
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<210> 87
 <211> 258
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 87
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<210> 88
 <211> 1182
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 88
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 ttggctgatt ttcgtgatta tagctctatt gacaacactc ctgaagaaaa agctcgcggt 180
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 ggggctattc tagtagtttc tgcaacagac ggagctatgc ctcaaaactaa agagcatatt 360
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 gataaagttc agttgggtcg tcttagagat actaaagaaa cgattgttac tggggttgaa 780
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<210> 89
 <211> 246
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 89
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 cttaaaagat acgtcaagat tgttttgatg aatatttttg gctttggatt ttccatctat 180
 tgtgtggatt tagctcttcg aaagtcctct tcattgttcg gtaaagtaac aagctttttc 240
 tttggt 246

<210> 90
 <211> 1137
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 90
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 cagatgagcc aaactcttcc tactattata gaagcacaag cggaagaggc attgcaggct 180
 gacaggggag ttgctggaca ggctcttaaa aaacttcgta aaaaaagatg tgcttctaga 240
 aaatctgcat gtaaggcttc ttttaagaaa aaggatttct tttcttgat tacaattgga 300
 ttgttctctg gaaatcatga gcagcgttta actgcgaaaa aagagaacaa ggctcgagggt 360
 aaagagcctc gagtagtggt tcaaacgact aaaaaacgac aaataactca gtctgagaaa 420
 gaatttttctg attggctatg taatagtaaa agagaaagaa agcttctcaa gaaaaagcct 480
 gtaaaatactt ctcttgctaa gagtgaagaa ttgagtccta aagaagcagc aatagctgct 540
 gctcgagctt ctctttctcc agaagaaaaa cgtcaattga ttcgtgagtg gttagcagaa 600
 gaaaagactg ctcgtaaactc tgggcgtgct gcttggtcgg taagtgaagaa tcttaaaaga 660
 gacggaagta ttacttctac attgcgctat gatgcggaga aagctttgac tacacgtgta 720

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aaacgcaatg aaaattctgt aaatgctaga gcaagacaac gagcgcgtct tcaaaaagcc 780
aagaaagcaa agacggagaa acctgaggct gatgagaaaag ctgcagaagc tgttgccgca 840
gctccaacca aacaggcgca taaggagcca gagaattact tcgcagctac agcttctaca 900
aataatacta atgttatgtc ctatctaaat gctcatcaat accgttgtga ttcttcggag 960
acggactggc cttgctcttc ttgtgttacg aaacgccgag ctaacttcgg tatttctgtg 1020
tgtactatgg tggttaccgt cattgctatg atcgtaggag ctgttatcat ttctaattgct 1080
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<210> 91

<211> 1689

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 91

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gccctcgcag ctctatctct gctcgtctga gtcgcctgcg ttattgccgt ctctgcggga 180
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gctgccacca ttatctgttc tgcaaaaaag gctttggctc aacgaaaaca aaaacaacta 300
gaagagtcgc ttccgttaga taatgcgacc gagcatgtga gttacctgac ctccagacacc 360
tcttatttta atcaatggga atccttaggt gctctaaata agcagttgtc tcagattgac 420
ttaactattc aagctccga aaaaaaacta ttaaaagaag ttcttggttc cagatacgat 480
tccattaatc actccatcga agagatctcc gatcgcttta cgaaaatgct ctctcttctt 540
cgattaagag aacattttta tcgaggagaa gagcggttatg ccccttattt aagccctcct 600
ctacttaaca agaatcgttt gctgacccaa atcacatcca atatgattag gatgctacca 660
aaatccggtg gtgttttttc cctcaaagcc aatacactaa gtcatgccag ccgcacacta 720
tatacagtat taaaagtcgc tttatcctta ggagttctcg ctggagtcgc tgctcttctc 780
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gaagatttga caaaacaata tgatatattg aacgcagcct ttaataaatc tttacaacaa 1140
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gacgaaaatg ctaaaactaa agaatcgcag cttctagact cagaaaatga ttcaaattct 1260
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caaaaagtga gtcaagaact gaaggcgcca caaaaatcat tcgcagtcct agaaaagcat 1560
gctctagaca gatcttatga atccagtgt gccacgatgg atttagctag agcgaatcaa 1620
gaaacacacc ggcttctgaa catcctctct gaattacaac aactagcaca atacctgtta 1680
gataatcac

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<210> 92

<211> 1074

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 92

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caggacgaga atggtgagtg tactgcaacc aaagattttc gcgatgtaga gcggatcgca 180
gaacaattgt ccattccata ttacacagtt tccttttcta aggaatataa agagcgagtg 240
ttttctagat ttctaagaga atatgcgaac ggctacactc ccaatcctga tgtgttatgc 300
aatcgagaaa tcaaatttga tttattacag aagaaggtag gtgagctaaa aggtgatttt 360
ttagccacgg gacattattg tcgaggaggg gctgatggaa ctggtttgtc cagaggaata 420

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gaccccaata aagaccaaag ttatttctta tgtggcactc ctaaggatgc tttatccaat 480
gtacttttcc ccttgggagg tatgtataaa acggaggtag gtcgaattgc tcaagaagct 540
ggtttagcta ccgccacaaa aaaagatagc acagggattt gttcattgg taaacggcct 600
tttaagagtt tccttgagca gttttagca gactctcctg gagacattat tgattttgat 660
acacaacagg tagtcggccg acatgaagga gccattatt atacgattgg acagcgtcga 720
gggttaaaca taggaggaat ggaaaagcct tgttatgttc ttagcaagaa tatggaaaag 780
aatattgttt acattgtaag gggatgaagat catcctttac tttatcgaca agagctttta 840
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cggtacagat cccctgacga gaaatgttct gtatatcctt tggaagatgg aacggtaaaa 960
gtgattttcg atgtccctgt gaaagctgtc acccctggac agactgtagc tttctaccag 1020
ggggacattt gtttaggagg aggagtgtt gaagtgccta tgattcatca gctg 1074

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<210> 93

<211> 801

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 93

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aaggaagtga ttctccctaa tctcctttct aagctacata tttcccgctc atcgtctctg 180
gttgatgtag gatgtgggta agggattttg gagaagcatt taccctaaaca tctcccttat 240
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tcacgtcgct ttcttcatca cgatatgaag caaccggtag cagcagatca tcatgagcag 360
ttttcccatg ctacagcaat cctttctctt cagaatatgg aatctccaga acaagctatc 420
gcacacacag cgaatctttt ggctcctcaa ggtagggtgt ttattgttct caaccatcca 480
tgctttcgca tccctaggct ttcttcatgg ctttatgatg agcctaaaaa actcttatct 540
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tctaatacaca atcttctgat tgatagtatg gaagaatgga tctcccctaa aaaatcctca 720
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tcagcattaa aaatatcaaa a 801

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<210> 94

<211> 2601

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 94

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ggttccctat tttgtttggg cattaaggat gtgcacggta atcttggttt gcttacttct 180
gctgtggacg acgccttacg cagagaacca actgtagtcg agggaaacgc tgttgctagt 240
ccttctccaa gtttacagca gttgttgctc aatgcgcata aagaagctag aagtatgggt 300
gacgaatata tatcagggga tcatttggtt ctagcttttt ggcatcgac taaagagcct 360
tttgcttctt ggagaaaaac tgtaaaaact acctctgaag cgttgaaaga attaattact 420
aaattaagac aaggaagtcg tatggactca cctagtgtcg aagaaaatct gaaaggatta 480
gagaaatact gcaaaaattt gactgtactt gcaagagaag gcaagcttga tctgtgtgatt 540
ggtcgagatg aagagattag acgtacgata caggttcttt ctagacgaac aaagaataat 600
cctatgttga taggggagcc cggagttggg aaaacagcaa tcgctgaagg acttgctctt 660
cgcatagtgc aaggggatgt tccagagagt ttaaaggaaa agcatctgta tgtactggat 720
atgggagctt tgattgcagg tgccaagtat cgaggagagt ttgaagagcg gttaaaaagt 780
gtattgaagg gtgtagaagc ttctgaaggc gactgtatcc tattcattga tgaagtgcatt 840
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gcttttagcac gaggcacttt gcattgtatt ggcgctacga ctttgaatga ataccaaaaa 960
tatatagaga aagacgcggc tttggaacgg cgtttccagc ctatttttgt aacagaacct 1020
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<210> 95
<211> 1016
<212> PRT
<213> Chlamydia trachomatis serovar D
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				5					10					15		
Cys	Ser	Tyr	Ser	Tyr	Gly	Phe	Ala	Ser	Ser	Pro	Gln	Val	Leu	Thr	Pro	
		20						25					30			
Asn	Val	Thr	Thr	Pro	Phe	Lys	Gly	Asp	Asp	Val	Tyr	Leu	Asn	Gly	Asp	
		35					40					45				
Cys	Ala	Phe	Val	Asn	Val	Tyr	Ala	Gly	Ala	Glu	Asn	Gly	Ser	Ile	Ile	
	50					55					60					
Ser	Ala	Asn	Gly	Asp	Asn	Leu	Thr	Ile	Thr	Gly	Gln	Asn	His	Thr	Leu	
					70					75					80	
Ser	Phe	Thr	Asp	Ser	Gln	Gly	Pro	Val	Leu	Gln	Asn	Tyr	Ala	Phe	Ile	
				85					90					95		
Ser	Ala	Gly	Glu	Thr	Leu	Thr	Leu	Lys	Asp	Phe	Ser	Ser	Leu	Met	Phe	
			100					105					110			
Ser	Lys	Asn	Val	Ser	Cys	Gly	Glu	Lys	Gly	Met	Ile	Ser	Gly	Lys	Thr	
		115					120					125				
Val	Ser	Ile	Ser	Gly	Ala	Gly	Glu	Val	Ile	Phe	Trp	Asp	Asn	Ser	Val	
	130					135					140					
Gly	Tyr	Ser	Pro	Leu	Ser	Ile	Val	Pro	Ala	Ser	Thr	Pro	Thr	Pro	Pro	
	145				150					155					160	
Ala	Pro	Ala	Pro	Ala	Pro	Ala	Ala	Ser	Ser	Ser	Leu	Ser	Pro	Thr	Val	
				165					170					175		
Ser	Asp	Ala	Arg	Lys	Gly	Ser	Ile	Phe	Ser	Val	Glu	Thr	Ser	Leu	Glu	
			180					185					190			

Ile Ser Gly Val Lys Lys Gly Val Met Phe Asp Asn Asn Ala Gly Asn
 195 200 205
 Phe Gly Thr Val Phe Arg Gly Asn Ser Asn Asn Asn Ala Gly Ser Gly
 210 215 220
 Gly Ser Gly Ser Ala Thr Thr Pro Ser Phe Thr Val Lys Asn Cys Lys
 225 230 235 240
 Gly Lys Val Ser Phe Thr Asp Asn Val Ala Ser Cys Gly Gly Gly Val
 245 250 255
 Val Tyr Lys Gly Thr Val Leu Phe Lys Asp Asn Glu Gly Gly Ile Phe
 260 265 270
 Phe Arg Gly Asn Thr Ala Tyr Asp Asp Leu Gly Ile Leu Ala Ala Thr
 275 280 285
 Ser Arg Asp Gln Asn Thr Glu Thr Gly Gly Gly Gly Val Ile Cys
 290 295 300
 Ser Pro Asp Asp Ser Val Lys Phe Glu Gly Asn Lys Gly Ser Ile Val
 305 310 315 320
 Phe Asp Tyr Asn Phe Ala Lys Gly Arg Gly Gly Ser Ile Leu Thr Lys
 325 330 335
 Glu Phe Ser Leu Val Ala Asp Asp Ser Val Val Phe Ser Asn Asn Thr
 340 345 350
 Ala Glu Lys Gly Gly Gly Ala Ile Tyr Ala Pro Thr Ile Asp Ile Ser
 355 360 365
 Thr Asn Gly Gly Ser Ile Leu Phe Glu Arg Asn Arg Ala Ala Glu Gly
 370 375 380
 Gly Ala Ile Cys Val Ser Glu Ala Ser Ser Gly Ser Thr Gly Asn Leu
 385 390 395 400
 Thr Leu Ser Ala Ser Asp Gly Asp Ile Val Phe Ser Gly Asn Met Thr
 405 410 415
 Ser Asp Arg Pro Gly Glu Arg Ser Ala Ala Arg Ile Leu Ser Asp Gly
 420 425 430
 Thr Thr Val Ser Leu Asn Ala Ser Gly Leu Ser Lys Leu Ile Phe Tyr
 435 440 445
 Asp Pro Val Val Gln Asn Asn Ser Ala Ala Gly Ala Ser Thr Pro Ser
 450 455 460
 Pro Ser Ser Ser Ser Met Pro Gly Ala Val Thr Ile Asn Gln Ser Gly
 465 470 475 480
 Asn Gly Ser Val Ile Phe Thr Ala Glu Ser Leu Thr Pro Ser Glu Lys
 485 490 495
 Leu Gln Val Leu Asn Ser Thr Ser Asn Phe Pro Gly Ala Leu Thr Val
 500 505 510
 Ser Gly Gly Glu Leu Val Val Thr Glu Gly Ala Thr Leu Thr Thr Gly
 515 520 525
 Thr Ile Thr Ala Thr Ser Gly Arg Val Thr Leu Gly Ser Gly Ala Ser
 530 535 540
 Leu Ser Ala Val Ala Gly Ala Ala Asn Asn Asn Tyr Thr Cys Thr Val
 545 550 555 560
 Ser Lys Leu Gly Ile Asp Leu Glu Ser Phe Leu Thr Pro Asn Tyr Lys
 565 570 575
 Thr Ala Ile Leu Gly Ala Asp Gly Thr Val Thr Val Asn Ser Gly Ser
 580 585 590
 Thr Leu Asp Leu Val Met Glu Ser Glu Ala Glu Val Tyr Asp Asn Pro
 595 600 605
 Leu Phe Val Gly Ser Leu Thr Ile Pro Phe Val Thr Leu Ser Ser Ser
 610 615 620
 Ser Ala Ser Asn Gly Val Thr Lys Asn Ser Val Thr Ile Asn Asp Ala
 625 630 635 640
 Asp Ala Ala His Tyr Gly Tyr Gln Gly Ser Trp Ser Ala Asp Trp Thr

645 650 655
 Lys Pro Pro Leu Ala Pro Asp Ala Lys Gly Met Val Pro Pro Asn Thr
 660 665 670
 Asn Asn Thr Leu Tyr Leu Thr Trp Arg Pro Ala Ser Asn Tyr Gly Glu
 675 680 685
 Tyr Arg Leu Asp Pro Gln Arg Lys Gly Glu Leu Val Pro Asn Ser Leu
 690 695 700
 Trp Val Ala Gly Ser Ala Leu Arg Thr Phe Thr Asn Gly Leu Lys Glu
 705 710 715 720
 His Tyr Val Ser Arg Asp Val Gly Phe Val Ala Ser Leu His Ala Leu
 725 730 735
 Gly Asp Tyr Ile Leu Asn Tyr Thr Gln Asp Asp Arg Asp Gly Phe Leu
 740 745 750
 Ala Arg Tyr Gly Gly Phe Gln Ala Thr Ala Ala Ser His Tyr Glu Asn
 755 760 765
 Gly Ser Ile Phe Gly Val Ala Phe Gly Gln Leu Tyr Gly Gln Thr Lys
 770 775 780
 Ser Arg Met Tyr Tyr Ser Lys Asp Ala Gly Asn Met Thr Met Leu Ser
 785 790 795 800
 Cys Phe Gly Arg Ser Tyr Val Asp Ile Lys Gly Thr Glu Thr Val Met
 805 810 815
 Tyr Trp Glu Thr Ala Tyr Gly Tyr Ser Val His Arg Met His Thr Gln
 820 825 830
 Tyr Phe Asn Asp Lys Thr Gln Lys Phe Asp His Ser Lys Cys His Trp
 835 840 845
 His Asn Asn Asn Tyr Tyr Ala Phe Val Gly Ala Glu His Asn Phe Leu
 850 855 860
 Glu Tyr Cys Ile Pro Thr Arg Gln Phe Ala Arg Asp Tyr Glu Leu Thr
 865 870 875 880
 Gly Phe Met Arg Phe Glu Met Ala Gly Gly Trp Ser Ser Ser Thr Arg
 885 890 895
 Glu Thr Gly Ser Leu Thr Arg Tyr Phe Ala Arg Gly Ser Gly His Asn
 900 905 910
 Met Ser Leu Pro Ile Gly Ile Val Ala His Ala Val Ser His Val Arg
 915 920 925
 Arg Ser Pro Pro Ser Lys Leu Thr Leu Asn Met Gly Tyr Arg Pro Asp
 930 935 940
 Ile Trp Arg Val Thr Pro His Cys Asn Met Glu Ile Ile Ala Asn Gly
 945 950 955 960
 Val Lys Thr Pro Ile Gln Gly Ser Pro Leu Ala Arg His Ala Phe Phe
 965 970 975
 Leu Glu Val His Asp Thr Leu Tyr Ile His His Phe Gly Arg Ala Tyr
 980 985 990
 Met Asn Tyr Ser Leu Asp Ala Arg Arg Gln Thr Ala His Phe Val
 995 1000 1005
 Ser Met Gly Leu Asn Arg Ile Phe
 1010 1015

<210> 96

<211> 346

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 96

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Ser Lys Arg Leu Val Asn Cys Asn Gln Val Asp Val Asn Gln Leu Val
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 Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn Gly Cys Ala
 35 40 45
 Asn Asn Trp Leu Pro Thr Glu Ile Pro Met Gly Lys Asp Ile Glu Leu
 50 55 60
 Trp Lys Ser Asp Arg Leu Ser Glu Asp Glu Arg Arg Val Ile Leu Leu
 65 70 75 80
 Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly Asn Asn Ile
 85 90 95
 Val Leu Ala Ile Phe Lys His Val Thr Asn Pro Glu Ala Arg Gln Tyr
 100 105 110
 Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His Thr Phe Leu
 115 120 125
 Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Lys Glu Ile Phe Asn Ala
 130 135 140
 Tyr Asn Glu Arg Ala Ala Ile Lys Ala Lys Asp Asp Phe Gln Met Glu
 145 150 155 160
 Ile Thr Gly Lys Val Leu Asp Pro Asn Phe Arg Thr Asp Ser Val Glu
 165 170 175
 Gly Leu Gln Glu Phe Val Lys Asn Leu Val Gly Tyr Tyr Ile Ile Met
 180 185 190
 Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu Ser Phe His
 195 200 205
 Arg Gln Asn Lys Met Ile Gly Ile Gly Glu Gln Tyr Gln Tyr Ile Leu
 210 215 220
 Arg Asp Glu Thr Ile His Leu Asn Phe Gly Ile Asp Leu Ile Asn Gly
 225 230 235 240
 Ile Lys Glu Glu Asn Pro Glu Ile Trp Thr Pro Glu Leu Gln Gln Glu
 245 250 255
 Ile Val Glu Leu Ile Lys Arg Ala Val Asp Leu Glu Ile Glu Tyr Ala
 260 265 270
 Gln Asp Cys Leu Pro Arg Gly Ile Leu Gly Leu Arg Ala Ser Met Phe
 275 280 285
 Ile Asp Tyr Val Gln His Ile Ala Asp Arg Arg Leu Glu Arg Ile Gly
 290 295 300
 Leu Lys Pro Ile Tyr His Thr Lys Asn Pro Phe Pro Trp Met Ser Glu
 305 310 315 320
 Thr Ile Asp Leu Asn Lys Glu Lys Asn Phe Phe Glu Thr Arg Val Ile
 325 330 335
 Glu Tyr Gln His Ala Ala Ser Leu Thr Trp
 340 345

<210> 97
 <211> 1053
 <212> PRT
 <213> Chlamydia trachomatis serovar D

<400> 97
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 Ile Val Lys Arg Asn Gly Met Phe Val Pro Phe Asp Arg Asn Arg Ile
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 Phe Gln Ala Leu Glu Ala Ala Phe Arg Asp Thr Arg Arg Ile Asp Asp
 35 40 45
 His Met Pro Leu Pro Glu Asp Leu Glu Ser Ser Ile Arg Ser Ile Thr

	50					55					60						
His 65	Gln	Val	Val	Lys	Glu 70	Val	Val	Gln	Lys	Ile 75	Thr	Asp	Gly	Gln	Val		
Val	Thr	Val	Glu	Arg 85	Ile	Gln	Asp	Met	Val 90	Glu	Ser	Gln	Leu	Tyr	Val		
Asn	Gly	Leu	Gln	Asp 100	Val	Ala	Arg	Asp 105	Tyr	Ile	Val	Tyr	Arg	Asp	Asp		
Arg	Lys	Ala 115	His	Arg	Lys	Lys	Ser 120	Trp	Gln	Ser	Leu	Ser	Val	Val	Arg		
Arg	Cys 130	Gly	Thr	Val	Val	His 135	Phe	Asn	Pro	Met	Lys 140	Ile	Ser	Ala	Ala		
Leu 145	Glu	Lys	Ala	Phe	Arg 150	Ala	Thr	Asp	Lys	Thr 155	Glu	Gly	Met	Thr	Pro		
Ser	Ser	Val	Arg	Glu 165	Glu	Ile	Asn	Ala	Leu 170	Thr	Gln	Asn	Ile	Val	Ala		
Glu	Ile	Glu	Glu 180	Cys	Cys	Pro	Gln	Gln 185	Asp	Arg	Arg	Ile	Asp	Ile	Glu		
Lys	Ile	Gln 195	Asp	Ile	Val	Glu	Gln 200	Gln	Leu	Met	Val	Val 205	Gly	His	Tyr		
Ala	Val 210	Ala	Lys	Asn	Tyr	Ile 215	Leu	Tyr	Arg	Glu	Ala 220	Arg	Ala	Arg	Val		
Arg 225	Asp	Asn	Arg	Glu	Glu 230	Asp	Gly	Ser	Thr	Glu 235	Lys	Thr	Ile	Ala	Glu		
Glu	Ala	Val	Glu	Val 245	Leu	Ser	Lys	Asp	Gly 250	Ser	Thr	Tyr	Thr	Met	Thr		
His	Ser	Gln 260	Leu	Leu	Ala	His	Leu	Ala 265	Arg	Ala	Cys	Ser	Arg	Phe	Pro		
Glu	Thr 275	Thr	Asp	Ala	Ala	Leu	Leu 280	Thr	Asp	Met	Ala	Phe 285	Ala	Asn	Phe		
Tyr	Ser 290	Gly	Ile	Lys	Glu	Ser 295	Glu	Val	Val	Leu	Ala 300	Cys	Ile	Met	Ala		
Ala 305	Arg	Ala	Asn	Ile	Glu 310	Lys	Glu	Pro	Asp	Tyr 315	Ala	Phe	Val	Ala	Ala		
Glu	Leu	Leu	Leu	Asp 325	Val	Val	Tyr	Lys	Glu 330	Ala	Leu	Gly	Lys	Ser	Lys		
Tyr	Ala	Glu	Asp 340	Leu	Glu	Gln	Ala 345	His	Arg	Asp	His	Phe	Lys	Arg	Tyr		
Ile	Ala	Glu 355	Gly	Asp	Thr	Tyr	Arg 360	Leu	Asn	Ala	Glu	Leu 365	Lys	His	Leu		
Phe	Asp 370	Leu	Asp	Ala	Leu	Ala 375	Asp	Ala	Met	Asp	Leu	Ser	Arg	Asp	Leu		
Gln 385	Phe	Ser	Tyr	Met	Gly 390	Ile	Gln	Asn	Leu	Tyr 395	Asp	Arg	Tyr	Phe	Asn		
His	His	Glu	Gly	Cys 405	Arg	Leu	Glu	Thr	Pro 410	Gln	Ile	Phe	Trp	Met	Arg		
Val	Ala	Met	Gly 420	Leu	Ala	Leu	Asn	Glu 425	Gln	Asp	Lys	Thr	Ser	Trp	Ala		
Ile	Thr	Phe 435	Tyr	Asn	Leu	Leu	Ser 440	Thr	Phe	Arg	Tyr	Thr 445	Pro	Ala	Thr		
Pro	Thr 450	Leu	Phe	Asn	Ser	Gly 455	Met	Arg	His	Ser	Gln	Leu	Ser	Ser	Cys		
Tyr 465	Leu	Ser	Thr	Val	Gln 470	Asp	Asn	Leu	Val	Asn 475	Ile	Tyr	Lys	Val	Ile		
Ala	Asp	Asn	Ala	Met 485	Leu	Ser	Lys	Trp	Ala 490	Gly	Gly	Ile	Gly	Asn	Asp		
Trp	Thr	Ala	Ile 500	Arg	Ala	Thr	Gly	Ala 505	Leu	Ile	Lys	Gly	Thr	Asn	Gly		

Arg Ser Gln Gly Val Ile Pro Phe Ile Lys Val Thr Asn Asp Thr Ala
 515 520 525
 Val Ala Val Asn Gln Gly Gly Lys Arg Lys Gly Ala Val Cys Val Tyr
 530 535 540
 Leu Glu Val Trp His Leu Asp Tyr Glu Asp Phe Leu Glu Leu Arg Lys
 545 550 555 560
 Asn Thr Gly Asp Glu Arg Arg Arg Ala His Asp Val Asn Ile Ala Ser
 565 570 575
 Trp Ile Pro Asp Leu Phe Phe Lys Arg Leu Gln Gln Lys Gly Thr Trp
 580 585 590
 Thr Leu Phe Ser Pro Asp Asp Val Pro Gly Leu His Asp Ala Tyr Gly
 595 600 605
 Glu Glu Phe Glu Arg Leu Tyr Glu Glu Tyr Glu Arg Lys Val Asp Thr
 610 615 620
 Gly Glu Ile Arg Leu Phe Lys Lys Val Glu Ala Glu Asp Leu Trp Arg
 625 630 635 640
 Lys Met Leu Ser Met Leu Phe Glu Thr Gly His Pro Trp Met Thr Phe
 645 650 655
 Lys Asp Pro Ser Asn Ile Arg Ser Ala Gln Asp His Lys Gly Val Val
 660 665 670
 Arg Cys Ser Asn Leu Cys Thr Glu Ile Leu Leu Asn Cys Ser Glu Thr
 675 680 685
 Glu Thr Ala Val Cys Asn Leu Gly Ser Ile Asn Leu Val Gln His Ile
 690 695 700
 Val Gly Asp Gly Leu Asp Glu Glu Lys Leu Ser Glu Thr Ile Ser Ile
 705 710 715 720
 Ala Val Arg Met Leu Asp Asn Val Ile Asp Ile Asn Phe Tyr Pro Thr
 725 730 735
 Lys Glu Ala Lys Glu Ala Asn Phe Ala His Arg Ala Ile Gly Leu Gly
 740 745 750
 Val Met Gly Phe Gln Asp Ala Leu Tyr Lys Leu Asp Ile Ser Tyr Ala
 755 760 765
 Ser Gln Glu Ala Val Glu Phe Ala Asp Tyr Ser Ser Glu Leu Ile Ser
 770 775 780
 Tyr Tyr Ala Ile Gln Ala Ser Cys Leu Leu Ala Lys Glu Arg Gly Thr
 785 790 795 800
 Tyr Ser Ser Tyr Lys Gly Ser Lys Trp Asp Arg Gly Leu Leu Pro Ile
 805 810 815
 Asp Thr Ile Gln Leu Leu Ala Asn Tyr Arg Gly Glu Ala Asn Leu Gln
 820 825 830
 Met Asp Thr Ser Ser Arg Lys Asp Trp Glu Pro Ile Arg Ser Leu Val
 835 840 845
 Lys Glu His Gly Met Arg His Cys Gln Leu Met Ala Ile Ala Pro Thr
 850 855 860
 Ala Thr Ile Ser Asn Ile Ile Gly Val Thr Gln Ser Ile Glu Pro Thr
 865 870 875 880
 Tyr Lys His Leu Phe Val Lys Ser Asn Leu Ser Gly Glu Phe Thr Ile
 885 890 895
 Pro Asn Val Tyr Leu Ile Glu Lys Leu Lys Lys Leu Gly Ile Trp Asp
 900 905 910
 Ala Asp Met Leu Asp Asp Leu Lys Tyr Phe Asp Gly Ser Leu Leu Glu
 915 920 925
 Ile Glu Arg Ile Pro Asp His Leu Lys His Ile Phe Leu Thr Ala Phe
 930 935 940
 Glu Ile Glu Pro Glu Trp Ile Ile Glu Cys Ala Ser Arg Arg Gln Lys
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 Trp Ile Asp Met Gly Gln Ser Leu Asn Leu Tyr Leu Ala Gln Pro Asp

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<211> 1531
<212> PRT
<213> Chlamydia trachomatis serovar D
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			20					25					30			
Val	Asp	Leu	His	Ala	Gly	Gly	Gln	Ser	Val	Asn	Glu	Leu	Val	Tyr	Val	
		35					40					45				
Gly	Pro	Gln	Ala	Val	Leu	Leu	Leu	Asp	Gln	Ile	Arg	Asp	Leu	Phe	Val	
	50					55					60					
Gly	Ser	Lys	Asp	Ser	Gln	Ala	Glu	Gly	Gln	Tyr	Arg	Leu	Ile	Val	Gly	
	65				70					75					80	
Asp	Pro	Ser	Ser	Phe	Gln	Glu	Lys	Asp	Ala	Asp	Thr	Leu	Pro	Gly	Lys	
				85					90					95		
Val	Glu	Gln	Ser	Thr	Leu	Phe	Ser	Val	Thr	Asn	Pro	Val	Val	Phe	Gln	
			100					105					110			
Gly	Val	Asp	Gln	Gln	Asp	Gln	Val	Ser	Ser	Gln	Gly	Leu	Ile	Cys	Ser	
		115					120					125				
Phe	Thr	Ser	Ser	Asn	Leu	Asp	Ser	Pro	Arg	Asp	Gly	Glu	Ser	Phe	Leu	
	130					135					140					
Gly	Ile	Ala	Phe	Val	Gly	Asp	Ser	Ser	Lys	Ala	Gly	Ile	Thr	Leu	Thr	
	145				150					155					160	
Asp	Val	Lys	Ala	Ser	Leu	Ser	Gly	Ala	Ala	Leu	Tyr	Ser	Thr	Glu	Asp	
				165				170						175		
Leu	Ile	Phe	Glu	Lys	Ile	Lys	Gly	Gly	Leu	Glu	Phe	Ala	Ser	Cys	Ser	
			180					185					190			
Ser	Leu	Glu	Gln	Gly	Gly	Ala	Cys	Ala	Ala	Gln	Ser	Ile	Leu	Ile	His	
		195					200					205				
Asp	Cys	Gln	Gly	Leu	Gln	Val	Lys	His	Cys	Thr	Thr	Ala	Val	Asn	Ala	
	210					215						220				
Glu	Gly	Ser	Ser	Ala	Asn	Asp	His	Leu	Gly	Phe	Gly	Gly	Gly	Ala	Phe	
	225				230					235					240	
Phe	Val	Thr	Gly	Ser	Leu	Ser	Gly	Glu	Lys	Ser	Leu	Tyr	Met	Pro	Ala	
				245					250					255		
Gly	Asp	Met	Val	Val	Ala	Asn	Cys	Asp	Gly	Ala	Ile	Ser	Phe	Glu	Gly	
			260					265					270			
Asn	Ser	Ala	Asn	Phe	Ala	Asn	Gly	Gly	Ala	Ile	Ala	Ala	Ser	Gly	Lys	
		275					280					285				
Val	Leu	Phe	Val	Ala	Asn	Asp	Lys	Lys	Thr	Ser	Phe	Ile	Glu	Asn	Arg	
	290					295						300				

Ala 305	Leu	Ser	Gly	Gly 310	Ala 310	Ile	Ala	Ala	Ser 315	Ser 315	Asp	Ile	Ala	Phe	Gln 320
Asn	Cys	Ala	Glu	Leu 325	Val	Phe	Lys	Gly	Asn 330	Cys	Ala	Ile	Gly	Thr 335	Glu
Asp	Lys	Gly	Ser 340	Leu	Gly	Gly	Gly	Ala 345	Ile	Ser	Ser	Leu	Gly 350	Thr	Val
Leu	Leu	Gln 355	Gly	Asn	His	Gly	Ile 360	Thr	Cys	Asp	Lys	Asn 365	Glu	Ser	Ala
Ser	Gln 370	Gly	Gly	Ala	Ile	Phe 375	Gly	Lys	Asn	Cys	Gln 380	Ile	Ser	Asp	Asn
Glu 385	Gly	Pro	Val	Val	Phe 390	Arg	Asp	Ser	Thr	Ala 395	Cys	Leu	Gly	Gly	Gly 400
Ala	Ile	Ala	Ala	Gln 405	Glu	Ile	Val	Ser	Ile 410	Gln	Asn	Asn	Gln	Ala 415	Gly
Ile	Ser	Phe	Glu 420	Gly	Gly	Lys	Ala	Ser 425	Phe	Gly	Gly	Gly	Ile 430	Ala	Cys
Gly	Ser	Phe 435	Ser	Ser	Ala	Gly	Gly 440	Ala	Ser	Val	Leu	Gly 445	Thr	Ile	Asp
Ile	Ser 450	Lys	Asn	Leu	Gly	Ala 455	Ile	Ser	Phe	Ser	Arg 460	Thr	Leu	Cys	Thr
Thr 465	Ser	Asp	Leu	Gly	Gln 470	Met	Glu	Tyr	Gln	Gly 475	Gly	Gly	Ala	Leu	Phe 480
Gly	Glu	Asn	Ile	Ser 485	Leu	Ser	Glu	Asn	Ala 490	Gly	Val	Leu	Thr	Phe 495	Lys
Asp	Asn	Ile 500	Val	Lys	Thr	Phe	Ala	Ser 505	Asn	Gly	Lys	Ile	Leu 510	Gly	Gly
Gly	Ala	Ile 515	Leu	Ala	Thr	Gly	Lys 520	Val	Glu	Ile	Thr	Asn 525	Asn	Ser	Glu
Gly	Ile 530	Ser	Phe	Thr	Gly	Asn 535	Ala	Arg	Ala	Pro	Gln 540	Ala	Leu	Pro	Thr
Gln 545	Glu	Glu	Phe	Pro	Leu 550	Phe	Ser	Lys	Lys	Glu 555	Gly	Arg	Pro	Leu	Ser 560
Ser	Gly	Tyr	Ser	Gly 565	Gly	Gly	Ala	Ile	Leu 570	Gly	Arg	Glu	Val	Ala 575	Ile
Leu	His	Asn	Ala 580	Ala	Val	Val	Phe	Glu 585	Gln	Asn	Arg	Leu	Gln 590	Cys	Ser
Glu	Glu	Glu 595	Ala	Thr	Leu	Leu	Gly 600	Cys	Cys	Gly	Gly	Gly 605	Ala	Val	His
Gly	Met 610	Asp	Ser	Thr	Ser	Ile 615	Val	Gly	Asn	Ser	Ser	Val 620	Arg	Phe	Gly
Asn 625	Asn	Tyr	Ala	Met	Gly 630	Gln	Gly	Val	Ser	Gly 635	Gly	Ala	Leu	Leu	Ser 640
Lys	Thr	Val	Gln	Leu 645	Ala	Gly	Asn	Gly	Ser 650	Val	Asp	Phe	Ser	Arg 655	Asn
Ile	Ala	Ser	Leu 660	Gly	Gly	Gly	Ala	Leu 665	Gln	Ala	Ser	Glu	Gly 670	Asn	Cys
Glu	Leu	Val 675	Asp	Asn	Gly	Tyr	Val 680	Leu	Phe	Arg	Asp	Asn 685	Arg	Gly	Arg
Val	Tyr 690	Gly	Gly	Ala	Ile	Ser 695	Cys	Leu	Arg	Gly	Asp 700	Val	Val	Ile	Ser
Gly 705	Asn	Lys	Gly	Arg	Val 710	Glu	Phe	Lys	Asp	Asn 715	Ile	Ala	Thr	Arg	Leu 720
Tyr	Val	Glu	Glu	Thr 725	Val	Glu	Lys	Val	Glu 730	Glu	Val	Glu	Pro	Ala 735	Pro
Glu	Gln	Lys	Asp 740	Asn	Asn	Glu	Leu	Ser 745	Phe	Leu	Gly	Arg	Ala 750	Glu	Gln
Ser	Phe	Ile	Thr	Ala	Ala	Asn	Gln	Ala	Leu	Phe	Ala	Ser	Glu	Asp	Gly

Asp	Leu	Ser	Pro	Glu	Ser	Ser	Ile	Ser	Ser	Glu	Glu	Leu	Ala	Lys	Arg	
	770					775					780					
Arg	Glu	Cys	Ala	Gly	Gly	Ala	Ile	Phe	Ala	Lys	Arg	Val	Arg	Ile	Val	
785					790					795					800	
Asp	Asn	Gln	Glu	Ala	Val	Val	Phe	Ser	Asn	Asn	Phe	Ser	Asp	Ile	Tyr	
				805						810				815		
Gly	Gly	Ala	Ile	Phe	Thr	Gly	Ser	Leu	Arg	Glu	Glu	Asp	Lys	Leu	Asp	
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Gly	Gln	Ile	Pro	Glu	Val	Leu	Ile	Ser	Gly	Asn	Ala	Gly	Asp	Val	Val	
		835				840						845				
Phe	Ser	Gly	Asn	Ser	Ser	Lys	Arg	Asp	Glu	His	Leu	Pro	His	Thr	Gly	
	850					855					860					
Gly	Gly	Ala	Ile	Cys	Thr	Gln	Asn	Leu	Thr	Ile	Ser	Gln	Asn	Thr	Gly	
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Asn	Val	Leu	Phe	Tyr	Asn	Asn	Val	Ala	Cys	Ser	Gly	Gly	Ala	Val	Arg	
				885				890						895		
Ile	Glu	Asp	His	Gly	Asn	Val	Leu	Leu	Glu	Ala	Phe	Gly	Gly	Asp	Ile	
			900				905						910			
Val	Phe	Lys	Gly	Asn	Ser	Ser	Phe	Arg	Ala	Gln	Gly	Ser	Asp	Ala	Ile	
		915					920					925				
Tyr	Phe	Ala	Gly	Lys	Glu	Ser	His	Ile	Thr	Ala	Leu	Asn	Ala	Thr	Glu	
	930					935					940					
Gly	His	Ala	Ile	Val	Phe	His	Asp	Ala	Leu	Val	Phe	Glu	Asn	Leu	Glu	
945					950				955						960	
Glu	Arg	Lys	Ser	Ala	Glu	Val	Leu	Leu	Ile	Asn	Ser	Arg	Glu	Asn	Pro	
				965				970						975		
Gly	Tyr	Thr	Gly	Ser	Ile	Arg	Phe	Leu	Glu	Ala	Glu	Ser	Lys	Val	Pro	
			980				985						990			
Gln	Cys	Ile	His	Val	Gln	Gln	Gly	Ser	Leu	Glu	Leu	Leu	Asn	Gly	Ala	
		995					1000					1005				
Thr	Leu	Cys	Ser	Tyr	Gly	Phe	Lys	Gln	Asp	Ala	Gly	Ala	Lys	Leu	Val	
	1010					1015					1020					
Leu	Ala	Ala	Gly	Ala	Lys	Leu	Lys	Ile	Leu	Asp	Ser	Gly	Thr	Pro	Val	
1025					1030					1035					1040	
Gln	Gln	Gly	His	Ala	Ile	Ser	Lys	Pro	Glu	Ala	Glu	Ile	Glu	Ser	Ser	
				1045					1050					1055		
Ser	Glu	Pro	Glu	Gly	Ala	His	Ser	Leu	Trp	Ile	Ala	Lys	Asn	Ala	Gln	
			1060					1065					1070			
Thr	Thr	Val	Pro	Met	Val	Asp	Ile	His	Thr	Ile	Ser	Val	Asp	Leu	Ala	
		1075				1080						1085				
Ser	Phe	Ser	Ser	Ser	Gln	Gln	Glu	Gly	Thr	Val	Glu	Ala	Pro	Gln	Val	
	1090															

Asn Ala Leu Trp Glu Glu Gly Ala Val Leu Ser Ala Leu Lys Asn Ala
 1220 1225 1230
 Arg Phe Ala His Asn Leu Thr Ala Gln Arg Met Glu Phe Asp Tyr Ser
 1235 1240 1245
 Thr Asn Val Trp Gly Phe Ala Phe Gly Gly Phe Arg Thr Leu Ser Ala
 1250 1255 1260
 Glu Asn Leu Val Ala Ile Asp Gly Tyr Lys Gly Ala Tyr Gly Gly Ala
 1265 1270 1275 1280
 Ser Ala Gly Val Asp Ile Gln Leu Met Glu Asp Phe Val Leu Gly Val
 1285 1290 1295
 Ser Gly Ala Ala Phe Leu Gly Lys Met Asp Ser Gln Lys Phe Asp Ala
 1300 1305 1310
 Glu Val Ser Arg Lys Gly Val Val Gly Ser Val Tyr Thr Gly Phe Leu
 1315 1320 1325
 Ala Gly Ser Trp Phe Phe Lys Gly Gln Tyr Ser Leu Gly Glu Thr Gln
 1330 1335 1340
 Asn Asp Met Lys Thr Arg Tyr Gly Val Leu Gly Glu Ser Ser Ala Ser
 1345 1350 1355 1360
 Trp Thr Ser Arg Gly Val Leu Ala Asp Ala Leu Val Glu Tyr Arg Ser
 1365 1370 1375
 Leu Val Gly Pro Val Arg Pro Thr Phe Tyr Ala Leu His Phe Asn Pro
 1380 1385 1390
 Tyr Val Glu Val Ser Tyr Ala Ser Met Lys Phe Pro Gly Phe Thr Glu
 1395 1400 1405
 Gln Gly Arg Glu Ala Arg Ser Phe Glu Asp Ala Ser Leu Thr Asn Ile
 1410 1415 1420
 Thr Ile Pro Leu Gly Met Lys Phe Glu Leu Ala Phe Ile Lys Gly Gln
 1425 1430 1435 1440
 Phe Ser Glu Val Asn Ser Leu Gly Ile Ser Tyr Ala Trp Glu Ala Tyr
 1445 1450 1455
 Arg Lys Val Glu Gly Gly Ala Val Gln Leu Leu Glu Ala Gly Phe Asp
 1460 1465 1470
 Trp Glu Gly Ala Pro Met Asp Leu Pro Arg Gln Glu Leu Arg Val Ala
 1475 1480 1485
 Leu Glu Asn Asn Thr Glu Trp Ser Ser Tyr Phe Ser Thr Val Leu Gly
 1490 1495 1500
 Leu Thr Ala Phe Cys Gly Gly Phe Thr Ser Thr Asp Ser Lys Leu Gly
 1505 1510 1515 1520
 Tyr Glu Ala Asn Thr Gly Leu Arg Leu Ile Phe
 1525 1530

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<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 99

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 Gly Gly Leu Gly Asp Ala Leu Tyr Gly Leu Ala Lys Ala Leu Ala Ala
 20 25 30
 Asn His Thr Thr Glu Val Val Ile Pro Leu Tyr Pro Lys Leu Phe Thr
 35 40 45
 Leu Pro Lys Glu Gln Asp Leu Cys Ser Ile Gln Lys Leu Ser Tyr Phe
 50 55 60
 Phe Ala Gly Glu Gln Glu Ala Thr Ala Phe Ser Tyr Phe Tyr Glu Gly

65 70 75 80
 Ile Lys Val Thr Leu Phe Lys Leu Asp Thr Gln Pro Glu Leu Phe Glu
 85 90 95
 Asn Ala Glu Thr Ile Tyr Thr Ser Asp Asp Ala Phe Arg Phe Cys Ala
 100 105 110
 Phe Ser Ala Ala Ala Ser Tyr Ile Gln Lys Glu Gly Ala Asn Ile
 115 120 125
 Val His Leu His Asp Trp His Thr Gly Leu Val Ala Gly Leu Leu Lys
 130 135 140
 Gln Gln Pro Cys Ser Gln Leu Gln Lys Ile Val Leu Thr Leu His Asn
 145 150 155 160
 Phe Gly Tyr Arg Gly Tyr Thr Thr Arg Glu Ile Leu Glu Ala Ser Ser
 165 170 175
 Leu Asn Glu Phe Tyr Ile Ser Gln Tyr Gln Leu Phe Arg Asp Pro Gln
 180 185 190
 Thr Cys Val Leu Leu Lys Gly Ala Leu Tyr Cys Ser Asp Phe Val Thr
 195 200 205
 Thr Val Ser Pro Thr Tyr Ala Lys Glu Ile Leu Glu Asp Tyr Ser Asp
 210 215 220
 Tyr Glu Ile His Asp Ala Ile Thr Ala Arg Gln His His Leu Arg Gly
 225 230 235 240
 Ile Leu Asn Gly Ile Asp Thr Thr Ile Trp Gly Pro Glu Thr Asp Pro
 245 250 255
 Asn Leu Ala Lys Asn Tyr Thr Lys Glu Leu Phe Glu Thr Pro Ser Ile
 260 265 270
 Phe Phe Glu Ala Lys Ala Glu Asn Lys Lys Ala Leu Tyr Glu Arg Leu
 275 280 285
 Gly Leu Ser Leu Glu His Ser Pro Cys Val Cys Ile Ile Ser Arg Ile
 290 295 300
 Ala Glu Gln Lys Gly Pro His Phe Met Lys Gln Ala Ile Leu His Ala
 305 310 315 320
 Leu Glu Asn Ala Tyr Thr Leu Ile Ile Ile Gly Thr Cys Tyr Gly Asn
 325 330 335
 Gln Leu His Glu Glu Phe Ala Asn Leu Gln Glu Ser Leu Ala Asn Ser
 340 345 350
 Pro Asp Val Arg Ile Leu Leu Thr Tyr Ser Asp Val Leu Ala Arg Gln
 355 360 365
 Ile Phe Ala Ala Ala Asp Met Ile Cys Ile Pro Ser Met Phe Glu Pro
 370 375 380
 Cys Gly Leu Thr Gln Met Ile Gly Met Arg Tyr Gly Thr Val Pro Leu
 385 390 395 400
 Val Arg Ala Thr Gly Gly Leu Ala Asp Thr Val Ala Asn Gly Ile Asn
 405 410 415
 Gly Phe Ser Phe Phe Asn Pro His Asp Phe Tyr Glu Phe Arg Asn Met
 420 425 430
 Leu Ser Glu Ala Val Thr Thr Tyr Arg Thr Asn His Asp Lys Trp Gln
 435 440 445
 His Ile Val Arg Ala Cys Leu Asp Phe Ser Ser Asp Leu Glu Thr Ala
 450 455 460
 Ala Asn Lys Tyr Leu Glu Ile Tyr Lys Gln
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<210> 100

<211> 393

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 100

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 20 25 30
 Leu Met Ile Asp Gly Ile Leu Trp Glu Gly Phe Gly Gly Asp Pro Cys
 35 40 45
 Asp Pro Cys Ala Thr Trp Cys Asp Ala Ile Ser Met Arg Val Gly Tyr
 50 55 60
 Tyr Gly Asp Phe Val Phe Asp Arg Val Leu Lys Thr Asp Val Asn Lys
 65 70 75 80
 Glu Phe Gln Met Gly Ala Lys Pro Thr Thr Asp Thr Gly Asn Ser Ala
 85 90 95
 Ala Pro Ser Thr Leu Thr Ala Arg Glu Asn Pro Ala Tyr Gly Arg His
 100 105 110
 Met Gln Asp Ala Glu Met Phe Thr Asn Ala Ala Cys Met Ala Leu Asn
 115 120 125
 Ile Trp Asp Arg Phe Asp Val Phe Cys Thr Leu Gly Ala Thr Ser Gly
 130 135 140
 Tyr Leu Lys Gly Asn Ser Ala Ser Phe Asn Leu Val Gly Leu Phe Gly
 145 150 155 160
 Asp Asn Glu Asn Gln Lys Thr Val Lys Ala Glu Ser Val Pro Asn Met
 165 170 175
 Ser Phe Asp Gln Ser Val Val Glu Leu Tyr Thr Asp Thr Thr Phe Ala
 180 185 190
 Trp Ser Val Gly Ala Arg Ala Ala Leu Trp Glu Cys Gly Cys Ala Thr
 195 200 205
 Leu Gly Ala Ser Phe Gln Tyr Ala Gln Ser Lys Pro Lys Val Glu Glu
 210 215 220
 Leu Asn Val Leu Cys Asn Ala Ala Glu Phe Thr Ile Asn Lys Pro Lys
 225 230 235 240
 Gly Tyr Val Gly Lys Glu Phe Pro Leu Asp Leu Thr Ala Gly Thr Asp
 245 250 255
 Ala Ala Thr Gly Thr Lys Asp Ala Ser Ile Asp Tyr His Glu Trp Gln
 260 265 270
 Ala Ser Leu Ala Leu Ser Tyr Arg Leu Asn Met Phe Thr Pro Tyr Ile
 275 280 285
 Gly Val Lys Trp Ser Arg Ala Ser Phe Asp Ala Asp Thr Ile Arg Ile
 290 295 300
 Ala Gln Pro Lys Ser Ala Thr Ala Ile Phe Asp Thr Thr Thr Leu Asn
 305 310 315 320
 Pro Thr Ile Ala Gly Ala Gly Asp Val Lys Thr Gly Ala Glu Gly Gln
 325 330 335
 Leu Gly Asp Thr Met Gln Ile Val Ser Leu Gln Leu Asn Lys Met Lys
 340 345 350
 Ser Arg Lys Ser Cys Gly Ile Ala Val Gly Thr Thr Ile Val Asp Ala
 355 360 365
 Asp Lys Tyr Ala Val Thr Val Glu Thr Arg Leu Ile Asp Glu Arg Ala
 370 375 380
 Ala His Val Asn Ala Gln Phe Arg Phe
 385 390

<210> 101

<211> 195

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 101

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Val Val Cys Gly Glu Glu Lys Glu Ile Ser Leu Ala Asp Phe Arg Gly
      20              25              30
Lys Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe Thr Tyr Val Cys
      35              40              45
Pro Thr Glu Leu His Ala Phe Gln Asp Arg Leu Val Asp Phe Glu Glu
      50              55              60
Arg Gly Ala Val Val Leu Gly Cys Ser Val Asp Asp Ile Glu Thr His
      65              70              75              80
Ser Arg Trp Leu Ala Val Ala Arg Asn Ala Gly Gly Ile Glu Gly Thr
      85              90              95
Glu Tyr Pro Leu Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala Phe
      100             105             110
Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe Leu
      115             120             125
Ile Asp Lys Tyr Gly Val Val Arg His Ala Val Ile Asn Asp Leu Pro
      130             135             140
Leu Gly Arg Ser Ile Asp Glu Glu Leu Arg Ile Leu Asp Ser Leu Ile
      145             150             155             160
Phe Phe Glu Asn His Gly Met Val Cys Pro Ala Asn Trp Arg Ser Gly
      165             170             175
Glu Arg Gly Met Val Pro Ser Glu Glu Gly Leu Lys Glu Tyr Phe Gln
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Thr Met Asp
      195

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<210> 102

<211> 86

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 102

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      20              25              30
Ile Ile Lys Lys Met Trp Asp Tyr Ile Lys Lys Asn Gly Leu Gln Asp
      35              40              45
Pro Thr Asn Lys Arg Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys Val
      50              55              60
Phe Gly Thr Glu Lys Pro Ile Asp Met Phe Gln Met Thr Lys Met Val
      65              70              75              80
Ser Gln His Ile Ile Lys
      85

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<210> 103

<211> 394

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 103

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Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu Thr Ala Ala Ile
20 25 30
Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Asp Phe Arg Asp Tyr Ser
35 40 45
Ser Ile Asp Asn Thr Pro Glu Glu Lys Ala Arg Gly Ile Thr Ile Asn
50 55 60
Ala Ser His Val Glu Tyr Glu Thr Ala Asn Arg His Tyr Ala His Val
65 70 75 80
Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala
85 90 95
Ala Gln Met Asp Gly Ala Ile Leu Val Ser Ala Thr Asp Gly Ala
100 105 110
Met Pro Gln Thr Lys Glu His Ile Leu Leu Ala Arg Gln Val Gly Val
115 120 125
Pro Tyr Ile Val Val Phe Leu Asn Lys Ile Asp Met Ile Ser Glu Glu
130 135 140
Asp Ala Glu Leu Val Asp Leu Val Glu Met Glu Leu Val Glu Leu Leu
145 150 155 160
Glu Glu Lys Gly Tyr Lys Gly Cys Pro Ile Ile Arg Gly Ser Ala Leu
165 170 175
Lys Ala Leu Glu Gly Asp Ala Ala Tyr Ile Glu Lys Val Arg Glu Leu
180 185 190
Met Gln Ala Val Asp Asp Asn Ile Pro Thr Pro Glu Arg Glu Ile Asp
195 200 205
Lys Pro Phe Leu Met Pro Ile Glu Asp Val Phe Ser Ile Ser Gly Arg
210 215 220
Gly Thr Val Val Thr Gly Arg Ile Glu Arg Gly Ile Val Lys Val Ser
225 230 235 240
Asp Lys Val Gln Leu Val Gly Leu Arg Asp Thr Lys Glu Thr Ile Val
245 250 255
Thr Gly Val Glu Met Phe Arg Lys Glu Leu Pro Glu Gly Arg Ala Gly
260 265 270
Glu Asn Val Gly Leu Leu Leu Arg Gly Ile Gly Lys Asn Asp Val Glu
275 280 285
Arg Gly Met Val Val Cys Leu Pro Asn Ser Val Lys Pro His Thr Gln
290 295 300
Phe Lys Cys Ala Val Tyr Val Leu Gln Lys Glu Glu Gly Gly Arg His
305 310 315 320
Lys Pro Phe Phe Thr Gly Tyr Arg Pro Gln Phe Phe Phe Arg Thr Thr
325 330 335
Asp Val Thr Gly Val Val Thr Leu Pro Glu Gly Ile Glu Met Val Met
340 345 350
Pro Gly Asp Asn Val Glu Phe Glu Val Gln Leu Ile Ser Pro Val Ala
355 360 365
Leu Glu Glu Gly Met Arg Phe Ala Ile Arg Glu Gly Gly Arg Thr Ile
370 375 380
Gly Ala Gly Thr Ile Ser Lys Ile Ile Ala
385 390

<210> 104

<211> 82

<212> PRT

<213> Chlamydia trachomatis serovar D

[illegible]

<211> 379

<213> Chlamydia trachomatis serovar D

Met	Val	Ile	Pro	Lys	Val	Asp	Leu	Gly	Glu	Ser	Ala	Val	Met	Met	Gly
				5					10					15	
Tyr	Lys	Leu	Thr	Ser	Gln	Leu	Ala	Met	Leu	Ser	Ile	Leu	Leu	Thr	Phe
			20					25					30		
Thr	His	Thr	Met	Gly	His	Ala	Ser	Gln	Met	Ser	Gln	Thr	Leu	Pro	Thr
		35					40					45			
Ile	Ile	Glu	Ala	Gln	Ala	Glu	Glu	Ala	Leu	Gln	Ala	Asp	Arg	Gly	Val
	50					55					60				
Ala	Gly	Gln	Ala	Leu	Lys	Lys	Leu	Arg	Lys	Lys	Arg	Cys	Ala	Ser	Arg
	65				70					75					80
Lys	Ser	Ala	Cys	Lys	Ala	Ser	Phe	Lys	Lys	Lys	Asp	Phe	Phe	Ser	Cys
				85					90					95	
Ile	Thr	Asn	Gly	Leu	Phe	Ser	Gly	Asn	His	Glu	Gln	Arg	Leu	Thr	Ala
			100					105					110		
Lys	Lys	Glu	Asn	Lys	Ala	Arg	Gly	Lys	Glu	Pro	Arg	Val	Val	Val	Gln
		115					120					125			
Thr	Thr	Lys	Lys	Arg	Gln	Ile	Thr	Gln	Ser	Glu	Lys	Glu	Phe	Phe	Asp
		130				135					140				
Trp	Leu	Cys	Asn	Ser	Lys	Arg	Glu	Arg	Lys	Leu	Leu	Lys	Lys	Lys	Pro
				150					155						160
Val	Asn	Thr	Ser	Leu	Ala	Lys	Ser	Glu	Glu	Leu	Ser	Pro	Lys	Glu	Ala
				165				170						175	
Ala	Ile	Ala	Ala	Ala	Arg	Ala	Ser	Leu	Ser	Pro	Glu	Glu	Lys	Arg	Gln
			180					185					190		
Leu	Ile	Arg	Glu	Trp	Leu	Ala	Glu	Glu	Lys	Thr	Ala	Arg	Lys	Ser	Gly
		195					200					205			
Arg	Ala	Ala	Cys	Ala	Val	Ser	Glu	Asn	Leu	Lys	Arg	Asp	Gly	Ser	Ile
	210					215					220				
Thr	Ser	Thr	Leu	Arg	Tyr	Asp	Ala	Glu	Lys	Ala	Leu	Thr	Thr	Arg	Val
					230				235						240
Lys	Arg	Asn	Glu	Asn	Ser	Val	Asn	Ala	Arg	Ala	Arg	Gln	Arg	Ala	Ala
				245					250					255	
Leu	Gln	Lys	Ala	Lys	Lys	Ala	Lys	Thr	Glu	Lys	Pro	Glu	Ala	Asp	Glu
			260					265					270		
Lys	Ala	Ala	Glu	Ala	Val	Ala	Ala	Ala	Pro	Thr	Lys	Gln	Ala	His	Lys
		275					280					285			

Glu Pro Glu Asn Tyr Phe Ala Ala Thr Ala Ser Thr Asn Asn Thr Asn
 290 295 300
 Val Met Ser Tyr Leu Asn Ala His Gln Tyr Arg Cys Asp Ser Ser Glu
 305 310 315 320
 Thr Asp Trp Pro Cys Ser Ser Cys Val Thr Lys Arg Arg Ala Asn Phe
 325 330 335
 Gly Ile Ser Val Cys Thr Met Val Val Thr Val Ile Ala Met Ile Val
 340 345 350
 Gly Ala Val Ile Ile Ser Asn Ala Thr Asp Ser Thr Val Ala Gly Ser
 355 360 365
 Ser Gly Thr Gly Gly Gly Gly Ser Thr Gln Pro
 370 375

<210> 106
 <211> 563
 <212> PRT
 <213> Chlamydia trachomatis serovar D

<400> 106
 Met Val Tyr Phe Arg Ala His Gln Pro Arg His Thr Pro Lys Thr Phe
 5 10 15
 Pro Leu Glu Val His His Ser Phe Ser Asp Lys His Pro Gln Ile Ala
 20 25 30
 Lys Ala Met Arg Ile Thr Gly Ile Ala Leu Ala Ala Leu Ser Leu Leu
 35 40 45
 Ala Val Val Ala Cys Val Ile Ala Val Ser Ala Gly Gly Ala Ala Ile
 50 55 60
 Pro Leu Ala Val Ile Ser Gly Ile Ala Val Met Ser Gly Leu Leu Ser
 65 70 75 80
 Ala Ala Thr Ile Ile Cys Ser Ala Lys Lys Ala Leu Ala Gln Arg Lys
 85 90 95
 Gln Lys Gln Leu Glu Glu Ser Leu Pro Leu Asp Asn Ala Thr Glu His
 100 105 110
 Val Ser Tyr Leu Thr Ser Asp Thr Ser Tyr Phe Asn Gln Trp Glu Ser
 115 120 125
 Leu Gly Ala Leu Asn Lys Gln Leu Ser Gln Ile Asp Leu Thr Ile Gln
 130 135 140
 Ala Pro Glu Lys Lys Leu Leu Lys Glu Val Leu Gly Ser Arg Tyr Asp
 145 150 155 160
 Ser Ile Asn His Ser Ile Glu Glu Ile Ser Asp Arg Phe Thr Lys Met
 165 170 175
 Leu Ser Leu Leu Arg Leu Arg Glu His Phe Tyr Arg Gly Glu Glu Arg
 180 185 190
 Tyr Ala Pro Tyr Leu Ser Pro Pro Leu Leu Asn Lys Asn Arg Leu Leu
 195 200 205
 Thr Gln Ile Thr Ser Asn Met Ile Arg Met Leu Pro Lys Ser Gly Gly
 210 215 220
 Val Phe Ser Leu Lys Ala Asn Thr Leu Ser His Ala Ser Arg Thr Leu
 225 230 235 240
 Tyr Thr Val Leu Lys Val Ala Leu Ser Leu Gly Val Leu Ala Gly Val
 245 250 255
 Ala Ala Leu Ile Ile Phe Leu Pro Pro Ser Leu Pro Phe Ile Ala Val
 260 265 270
 Ile Gly Val Ser Ser Leu Ala Leu Gly Met Ala Ser Phe Leu Met Ile
 275 280 285
 Arg Gly Ile Lys Tyr Leu Leu Glu His Ser Pro Leu Asn Arg Lys Gln

290 295 300
 Leu Ala Lys Asp Ile Gln Lys Thr Ile Gly Pro Asp Val Leu Ala Ser
 305 310 315 320
 Met Val His Tyr Gln His Gln Leu Leu Ser His Leu His Glu Thr Leu
 325 330 335
 Leu Asp Glu Ala Ile Thr Ala Arg Trp Ser Glu Pro Phe Phe Ile Glu
 340 345 350
 His Ala Asn Leu Lys Ala Lys Ile Glu Asp Leu Thr Lys Gln Tyr Asp
 355 360 365
 Ile Leu Asn Ala Ala Phe Asn Lys Ser Leu Gln Gln Asp Glu Ala Leu
 370 375 380
 Arg Ser Gln Leu Glu Lys Arg Ala Tyr Leu Phe Pro Ile Pro Asn Asn
 385 390 395 400
 Asp Glu Asn Ala Lys Thr Lys Glu Ser Gln Leu Leu Asp Ser Glu Asn
 405 410 415
 Asp Ser Asn Ser Glu Phe Gln Glu Ile Ile Asn Lys Gly Leu Glu Ala
 420 425 430
 Ala Asn Lys Arg Arg Ala Asp Ala Lys Ser Lys Phe Tyr Thr Glu Asp
 435 440 445
 Glu Thr Ser Asp Lys Ile Phe Ser Ile Trp Lys Pro Thr Lys Asn Leu
 450 455 460
 Ala Leu Glu Asp Leu Trp Arg Val His Glu Ala Cys Asn Glu Glu Gln
 465 470 475 480
 Gln Ala Leu Leu Leu Glu Asp Tyr Met Ser Tyr Lys Thr Ser Glu Cys
 485 490 495
 Gln Ala Ala Leu Gln Lys Val Ser Gln Glu Leu Lys Ala Ala Gln Lys
 500 505 510
 Ser Phe Ala Val Leu Glu Lys His Ala Leu Asp Arg Ser Tyr Glu Ser
 515 520 525
 Ser Val Ala Thr Met Asp Leu Ala Arg Ala Asn Gln Glu Thr His Arg
 530 535 540
 Leu Leu Asn Ile Leu Ser Glu Leu Gln Gln Leu Ala Gln Tyr Leu Leu
 545 550 555 560
 Asp Asn His

<210> 107

<211> 358

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 107

Met Arg Lys Thr Val Ile Val Ala Met Ser Gly Gly Val Asp Ser Ser
 5 10 15
 Val Val Ala Tyr Leu Leu Lys Lys Gln Gly Glu Tyr Asn Val Val Gly
 20 25 30
 Leu Phe Met Lys Asn Trp Gly Glu Gln Asp Glu Asn Gly Glu Cys Thr
 35 40 45
 Ala Thr Lys Asp Phe Arg Asp Val Glu Arg Ile Ala Glu Gln Leu Ser
 50 55 60
 Ile Pro Tyr Tyr Thr Val Ser Phe Ser Lys Glu Tyr Lys Glu Arg Val
 65 70 75 80
 Phe Ser Arg Phe Leu Arg Glu Tyr Ala Asn Gly Tyr Thr Pro Asn Pro
 85 90 95
 Asp Val Leu Cys Asn Arg Glu Ile Lys Phe Asp Leu Leu Gln Lys Lys
 100 105 110

Val Arg Glu Leu Lys Gly Asp Phe Leu Ala Thr Gly His Tyr Cys Arg
 115 120 125
 Gly Gly Ala Asp Gly Thr Gly Leu Ser Arg Gly Ile Asp Pro Asn Lys
 130 135 140
 Asp Gln Ser Tyr Phe Leu Cys Gly Thr Pro Lys Asp Ala Leu Ser Asn
 145 150 155 160
 Val Leu Phe Pro Leu Gly Gly Met Tyr Lys Thr Glu Val Arg Arg Ile
 165 170 175
 Ala Gln Glu Ala Gly Leu Ala Thr Ala Thr Lys Lys Asp Ser Thr Gly
 180 185 190
 Ile Cys Phe Ile Gly Lys Arg Pro Phe Lys Ser Phe Leu Glu Gln Phe
 195 200 205
 Val Ala Asp Ser Pro Gly Asp Ile Ile Asp Phe Asp Thr Gln Gln Val
 210 215 220
 Val Gly Arg His Glu Gly Ala His Tyr Tyr Thr Ile Gly Gln Arg Arg
 225 230 235 240
 Gly Leu Asn Ile Gly Gly Met Glu Lys Pro Cys Tyr Val Leu Ser Lys
 245 250 255
 Asn Met Glu Lys Asn Ile Val Tyr Ile Val Arg Gly Glu Asp His Pro
 260 265 270
 Leu Leu Tyr Arg Gln Glu Leu Leu Ala Lys Glu Leu Asn Trp Phe Val
 275 280 285
 Pro Leu Gln Glu Pro Met Ile Cys Ser Ala Lys Val Arg Tyr Arg Ser
 290 295 300
 Pro Asp Glu Lys Cys Ser Val Tyr Pro Leu Glu Asp Gly Thr Val Lys
 305 310 315 320
 Val Ile Phe Asp Val Pro Val Lys Ala Val Thr Pro Gly Gln Thr Val
 325 330 335
 Ala Phe Tyr Gln Gly Asp Ile Cys Leu Gly Gly Gly Val Ile Glu Val
 340 345 350
 Pro Met Ile His Gln Leu
 355

<210> 108

<211> 267

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 108

Met Ser Arg Lys Pro Ala Ser Asn Ser Ser Arg Asn Thr Lys Arg Ser
 5 10 15
 Ser Asp Thr Ser Trp Glu Val Ile Ala Gln Asp Tyr Asn Lys Ala Val
 20 25 30
 Asp Arg Asp Gly His Phe Tyr His Lys Glu Val Ile Leu Pro Asn Leu
 35 40 45
 Leu Ser Lys Leu His Ile Ser Arg Ser Ser Ser Leu Val Asp Val Gly
 50 55 60
 Cys Gly Gln Gly Ile Leu Glu Lys His Leu Pro Lys His Leu Pro Tyr
 65 70 75 80
 Leu Gly Ile Asp Leu Ser Pro Ser Leu Leu Arg Phe Ala Lys Lys Ser
 85 90 95
 Ala Ser Ser Lys Ser Arg Arg Phe Leu His His Asp Met Thr Gln Pro
 100 105 110
 Val Pro Ala Asp His His Glu Gln Phe Ser His Ala Thr Ala Ile Leu
 115 120 125
 Ser Leu Gln Asn Met Glu Ser Pro Glu Gln Ala Ile Ala His Thr Ala

130 135 140
 Asn Leu Leu Ala Pro Gln Gly Arg Leu Phe Ile Val Leu Asn His Pro
 145 150 155 160
 Cys Phe Arg Ile Pro Arg Leu Ser Ser Trp Leu Tyr Asp Glu Pro Lys
 165 170 175
 Lys Leu Leu Ser Arg Lys Ile Asp Arg Tyr Leu Ser Pro Val Ala Val
 180 185 190
 Pro Ile Val Val His Pro Gly Glu Lys His Ser Glu Thr Thr Tyr Ser
 195 200 205
 Phe His Phe Pro Leu Ser Tyr Trp Val Gln Ala Leu Ser Asn His Asn
 210 215 220
 Leu Leu Ile Asp Ser Met Glu Glu Trp Ile Ser Pro Lys Lys Ser Ser
 225 230 235 240
 Gly Lys Arg Ala Arg Ala Glu Asn Leu Cys Arg Lys Glu Phe Pro Leu
 245 250 255
 Phe Leu Phe Ile Ser Ala Leu Lys Ile Ser Lys
 260 265

<210> 109

<211> 867

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 109

Met Glu Lys Phe Ser Asp Ala Val Ser Glu Ala Leu Glu Lys Ala Phe
 5 10 15
 Glu Leu Ala Lys Asn Ser Lys His Ser Tyr Val Thr Glu Asn His Leu
 20 25 30
 Leu Lys Ser Leu Leu Gln Asn Pro Gly Ser Leu Phe Cys Leu Val Ile
 35 40 45
 Lys Asp Val His Gly Asn Leu Gly Leu Leu Thr Ser Ala Val Asp Asp
 50 55 60
 Ala Leu Arg Arg Glu Pro Thr Val Val Glu Gly Thr Ala Val Ala Ser
 65 70 75 80
 Pro Ser Pro Ser Leu Gln Gln Leu Leu Leu Asn Ala His Gln Glu Ala
 85 90 95
 Arg Ser Met Gly Asp Glu Tyr Leu Ser Gly Asp His Leu Leu Leu Ala
 100 105 110
 Phe Trp Arg Ser Thr Lys Glu Pro Phe Ala Ser Trp Arg Lys Thr Val
 115 120 125
 Lys Thr Thr Ser Glu Ala Leu Lys Glu Leu Ile Thr Lys Leu Arg Gln
 130 135 140
 Gly Ser Arg Met Asp Ser Pro Ser Ala Glu Glu Asn Leu Lys Gly Leu
 145 150 155 160
 Glu Lys Tyr Cys Lys Asn Leu Thr Val Leu Ala Arg Glu Gly Lys Leu
 165 170 175
 Asp Pro Val Ile Gly Arg Asp Glu Glu Ile Arg Arg Thr Ile Gln Val
 180 185 190
 Leu Ser Arg Arg Thr Lys Asn Asn Pro Met Leu Ile Gly Glu Pro Gly
 195 200 205
 Val Gly Lys Thr Ala Ile Ala Glu Gly Leu Ala Leu Arg Ile Val Gln
 210 215 220
 Gly Asp Val Pro Glu Ser Leu Lys Glu Lys His Leu Tyr Val Leu Asp
 225 230 235 240
 Met Gly Ala Leu Ile Ala Gly Ala Lys Tyr Arg Gly Glu Phe Glu Glu

				245					250					255		
Arg	Leu	Lys	Ser	Val	Leu	Lys	Gly	Val	Glu	Ala	Ser	Glu	Gly	Glu	Cys	
			260					265					270			
Ile	Leu	Phe	Ile	Asp	Glu	Val	His	Thr	Leu	Val	Gly	Ala	Gly	Ala	Thr	
		275					280					285				
Asp	Gly	Ala	Met	Asp	Ala	Ala	Asn	Leu	Leu	Lys	Pro	Ala	Leu	Ala	Arg	
	290					295					300					
Gly	Thr	Leu	His	Cys	Ile	Gly	Ala	Thr	Thr	Leu	Asn	Glu	Tyr	Gln	Lys	
305					310					315					320	
Tyr	Ile	Glu	Lys	Asp	Ala	Ala	Leu	Glu	Arg	Arg	Phe	Gln	Pro	Ile	Phe	
				325					330					335		
Val	Thr	Glu	Pro	Ser	Leu	Glu	Asp	Ala	Val	Phe	Ile	Leu	Arg	Gly	Leu	
			340					345					350			
Arg	Glu	Lys	Tyr	Glu	Ile	Phe	His	Gly	Val	Arg	Ile	Thr	Glu	Gly	Ala	
		355					360					365				
Leu	Asn	Ala	Ala	Val	Val	Leu	Ser	Tyr	Arg	Tyr	Ile	Thr	Asp	Arg	Phe	
	370					375					380					
Leu	Pro	Asp	Lys	Ala	Ile	Asp	Leu	Ile	Asp	Glu	Ala	Ala	Ser	Leu	Ile	
385					390					395					400	
Arg	Met	Gln	Ile	Gly	Ser	Leu	Pro	Leu	Pro	Ile	Asp	Glu	Lys	Glu	Arg	
				405					410					415		
Glu	Leu	Ser	Ala	Leu	Ile	Val	Lys	Gln	Glu	Ala	Ile	Lys	Arg	Glu	Gln	
			420					425					430			
Ala	Pro	Ala	Tyr	Gln	Glu	Glu	Ala	Glu	Asp	Met	Gln	Lys	Ala	Ile	Asp	
		435					440					445				
Arg	Val	Lys	Glu	Glu	Leu	Ala	Ala	Leu	Arg	Leu	Arg	Trp	Asp	Glu	Glu	
	450					455					460					
Lys	Gly	Leu	Ile	Thr	Gly	Leu	Lys	Glu	Lys	Lys	Asn	Ala	Leu	Glu	Asn	
465					470					475					480	
Leu	Lys	Phe	Ala	Glu	Glu	Glu	Ala	Glu	Arg	Thr	Ala	Asp	Tyr	Asn	Arg	
				485					490					495		
Val	Ala	Glu	Leu	Arg	Tyr	Ser	Leu	Ile	Pro	Ser	Leu	Glu	Glu	Glu	Ile	
			500					505					510			
His	Leu	Ala	Glu	Glu	Ala	Leu	Asn	Gln	Arg	Asp	Gly	Arg	Leu	Leu	Gln	
		515					520					525				
Glu	Glu	Val	Asp	Glu	Arg	Leu	Ile	Ala	Gln	Val	Val	Ala	Asn	Trp	Thr	
	530					535					540					
Gly	Ile	Pro	Val	Gln	Lys	Met	Leu	Glu	Gly	Glu	Ser	Glu	Lys	Leu	Leu	
545					550					555					560	
Val	Leu	Glu	Glu	Ser	Leu	Glu	Glu	Arg	Val	Val	Gly	Gln	Pro	Phe	Ala	
				565					570					575		
Ile	Ala	Ala	Val	Ser	Asp	Ser	Ile	Arg	Ala	Ala	Arg	Val	Gly	Leu	Ser	
			580					585					590			
Asp	Pro	Gln	Arg	Pro	Leu	Gly	Val	Phe	Leu	Phe	Leu	Gly	Pro	Thr	Gly	
		595				600						605				
Val	Gly	Lys	Thr	Glu	Leu	Ala	Lys	Ala	Leu	Ala	Glu	Leu	Leu	Phe	Asn	
	610					615					620					
Lys	Glu	Glu	Ala	Met	Ile	Arg	Phe	Asp	Met	Thr	Glu	Tyr	Met	Glu	Lys	
625					630					635					640	
His	Ser	Val	Ser	Lys	Leu	Ile	Gly	Ser	Pro	Pro	Gly	Tyr	Val	Gly	Tyr	
				645					650					655		
Glu	Glu	Gly	Gly	Ser	Leu	Ser	Glu	Ala	Leu	Arg	Arg	Arg	Pro	Tyr	Ser	
			660					665					670			
Val	Val	Leu	Phe	Asp	Glu	Ile	Glu	Lys	Ala	Asp	Lys	Glu	Val	Phe	Asn	
		675					680					685				
Ile	Leu	Leu	Gln	Ile	Phe	Asp	Asp	Gly	Ile	Leu	Thr	Asp	Ser	Lys	Lys	
						695					700					

Arg Lys Val Asn Cys Lys Asn Ala Leu Phe Ile Met Thr Ser Asn Ile
 705 710 715 720
 Gly Ser Gln Glu Leu Ala Asp Tyr Cys Thr Lys Lys Gly Thr Ile Val
 725 730 735
 Asp Lys Glu Ala Val Leu Ser Val Val Ala Pro Ala Leu Lys Asn Tyr
 740 745 750
 Phe Ser Pro Glu Phe Ile Asn Arg Ile Asp Asp Ile Leu Pro Phe Val
 755 760 765
 Pro Leu Thr Thr Glu Asp Ile Val Lys Ile Val Gly Ile Gln Met Asn
 770 775 780
 Arg Val Ala Leu Arg Leu Leu Glu Arg Lys Ile Ser Leu Thr Trp Asp
 785 790 795 800
 Asp Ser Leu Val Leu Phe Leu Ser Glu Gln Gly Tyr Asp Ser Ala Phe
 805 810 815
 Gly Ala Arg Pro Leu Lys Arg Leu Ile Gln Gln Lys Val Val Thr Met
 820 825 830
 Leu Ser Lys Ala Leu Leu Lys Gly Asp Ile Lys Pro Gly Met Ala Val
 835 840 845
 Glu Leu Thr Met Ala Lys Asp Val Val Val Phe Lys Ile Lys Thr Asn
 850 855 860
 Pro Ala Val
 865

<210> 110
 <211> 1170
 <212> DNA
 <213> *Chlamydia pneumoniae*

<400> 110
 atgaaaaaac tcttaaaagtc ggcgttatta tccgcgcgat ttgctgggttc tgttggtctcc 60
 ttacaagcct tgctgtagg gaacccttct gatccaagct tattaattga tgggtacaata 120
 tgggaaggtg ctgcaggaga tcttgcgat ccttgcgcta cttgggtgcga cgctatttagc 180
 ttacgtgctg gattttacgg agactatggt ttcgaccgta tottaaaaagt agatgcacct 240
 aaaacatttt ctatgggagc caagcctact ggatccgctg ctgcaaaacta tactactgcc 300
 gtagatagac ctaaccgggc ctacaataag catttacacg atgcagagtg gttcactaat 360
 gcaggcttca ttgccttaaa catttgggat cgctttgatg ttttctgtac tttaggagct 420
 tctaattggtt acattagagg aaactctaca gcgttcaatc tcgttgggtt attcggagtt 480
 aaaggtacta ctgtaaattgc aaatgaacta ccaaacggtt ctttaagtaa cggagttggt 540
 gaactttaca cagacacctc tttctcttgg agcgtaggcg ctctgggagc cttatgggaa 600
 tgcggttggt caactttggg agctgaattc caatatgcac agtccaaaacc taaagttgaa 660
 gaacttaattg tgatctgtaa cgtatcgcaa ttctctgtaa acaaacccaa gggctataaa 720
 ggcgttgctt tccccttgcc aacagacgct ggcgtagcaa cagctactgg aacaaagtct 780
 ggcaccatca attatcatga atggcaagta ggagcctctc tatcttacag actaaactct 840
 ttagtgccat acattggagt acaatggtct cgagcaactt ttgatgctga taacatccgc 900
 attgctcagc caaaactacc tacagctggt ttaaaactta ctgcatggaa ccttcttta 960
 ctaggaaatg ccacagcatt gtctactact gattcgttct cagacttcat gcaaattggt 1020
 tctgtcaga tcaacaagtt taaatctaga aaagcttggt gagttactgt aggagctact 1080
 ttagttgatg ctgataaatg gtcacttact gcagaagctc gtttaattaa cgagagagct 1140
 gctcacgtat ctggtcagtt cagattctaa 1170

<210> 111
 <211> 2601
 <212> DNA
 <213> *Chlamydia pneumoniae*

<400> 111

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<210> 112
<211> 389
<212> PRT
<213> Chlamydia pneumoniae
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<400> 112
Met Lys Lys Leu Leu Lys Ser Ala Leu Leu Ser Ala Ala Phe Ala Gly
 5 10 15
Ser Val Gly Ser Leu Gln Ala Leu Pro Val Gly Asn Pro Ser Asp Pro
 20 25 30
Ser Leu Leu Ile Asp Gly Thr Ile Trp Glu Gly Ala Ala Gly Asp Pro

35 40 45
 Cys Asp Pro Cys Ala Thr Trp Cys Asp Ala Ile Ser Leu Arg Ala Gly
 50 55 60
 Phe Tyr Gly Asp Tyr Val Phe Asp Arg Ile Leu Lys Val Asp Ala Pro
 65 70 75 80
 Lys Thr Phe Ser Met Gly Ala Lys Pro Thr Gly Ser Ala Ala Ala Asn
 85 90 95
 Tyr Thr Thr Ala Val Asp Arg Pro Asn Pro Ala Tyr Asn Lys His Leu
 100 105 110
 His Asp Ala Glu Trp Phe Thr Asn Ala Gly Phe Ile Ala Leu Asn Ile
 115 120 125
 Trp Asp Arg Phe Asp Val Phe Cys Thr Leu Gly Ala Ser Asn Gly Tyr
 130 135 140
 Ile Arg Gly Asn Ser Thr Ala Phe Asn Leu Val Gly Leu Phe Gly Val
 145 150 155 160
 Lys Gly Thr Thr Val Asn Ala Asn Glu Leu Pro Asn Val Ser Leu Ser
 165 170 175
 Asn Gly Val Val Glu Leu Tyr Thr Asp Thr Ser Phe Ser Trp Ser Val
 180 185 190
 Gly Ala Arg Gly Ala Leu Trp Glu Cys Gly Cys Ala Thr Leu Gly Ala
 195 200 205
 Glu Phe Gln Tyr Ala Gln Ser Lys Pro Lys Val Glu Glu Leu Asn Val
 210 215 220
 Ile Cys Asn Val Ser Gln Phe Ser Val Asn Lys Pro Lys Gly Tyr Lys
 225 230 235 240
 Gly Val Ala Phe Pro Leu Pro Thr Asp Ala Gly Val Ala Thr Ala Thr
 245 250 255
 Gly Thr Lys Ser Ala Thr Ile Asn Tyr His Glu Trp Gln Val Gly Ala
 260 265 270
 Ser Leu Ser Tyr Arg Leu Asn Ser Leu Val Pro Tyr Ile Gly Val Gln
 275 280 285
 Trp Ser Arg Ala Thr Phe Asp Ala Asp Asn Ile Arg Ile Ala Gln Pro
 290 295 300
 Lys Leu Pro Thr Ala Val Leu Asn Leu Thr Ala Trp Asn Pro Ser Leu
 305 310 315 320
 Leu Gly Asn Ala Thr Ala Leu Ser Thr Thr Asp Ser Phe Ser Asp Phe
 325 330 335
 Met Gln Ile Val Ser Cys Gln Ile Asn Lys Phe Lys Ser Arg Lys Ala
 340 345 350
 Cys Gly Val Thr Val Gly Ala Thr Leu Val Asp Ala Asp Lys Trp Ser
 355 360 365
 Leu Thr Ala Glu Ala Arg Leu Ile Asn Glu Arg Ala Ala His Val Ser
 370 375 380
 Gly Gln Phe Arg Phe
 385

<210> 113
 <211> 866
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 113
 Met Glu Lys Phe Ser Asp Ala Val Ser Glu Ala Leu Glu Lys Ala Phe
 5 10 15
 Glu Leu Ala Lys Ser Ser Lys His Thr Tyr Val Thr Glu Asn His Leu
 20 25 30

Leu Leu Ala Leu Leu Glu Asn Thr Glu Ser Leu Phe Tyr Leu Val Ile
 35 40 45
 Lys Asp Ile His Gly Asn Pro Gly Leu Leu Asn Thr Ala Val Lys Asp
 50 55 60
 Ala Leu Ser Arg Glu Pro Thr Val Val Glu Gly Glu Val Asp Pro Lys
 65 70 75 80
 Pro Ser Pro Gly Leu Gln Thr Leu Leu Arg Asp Ala Lys Gln Glu Ala
 85 90 95
 Lys Thr Leu Gly Asp Glu Tyr Ile Ser Gly Asp His Leu Leu Leu Ala
 100 105 110
 Phe Trp Ser Ser Asn Lys Glu Pro Phe Asn Ser Trp Lys Gln Thr Thr
 115 120 125
 Lys Val Ser Phe Lys Asp Leu Lys Asn Leu Ile Thr Lys Ile Arg Arg
 130 135 140
 Gly Asn Arg Met Asp Ser Pro Ser Ala Glu Ser Asn Phe Gln Gly Leu
 145 150 155 160
 Glu Lys Tyr Cys Lys Asn Leu Thr Ala Leu Ala Arg Glu Gly Lys Leu
 165 170 175
 Asp Pro Val Ile Gly Arg Asp Glu Glu Ile Arg Arg Thr Ile Gln Val
 180 185 190
 Leu Ser Arg Arg Thr Lys Asn Asn Pro Met Leu Ile Gly Glu Pro Gly
 195 200 205
 Val Gly Lys Thr Ala Ile Ala Glu Gly Leu Ala Leu Arg Leu Ile Gln
 210 215 220
 Gly Asp Val Pro Glu Ser Leu Lys Gly Lys Gln Leu Tyr Val Leu Asp
 225 230 235 240
 Met Gly Ala Leu Ile Ala Gly Ala Lys Tyr Arg Gly Glu Phe Glu Glu
 245 250 255
 Arg Leu Lys Ser Val Leu Lys Asp Val Glu Ser Gly Asp Gly Glu His
 260 265 270
 Ile Ile Phe Ile Asp Glu Val His Thr Leu Val Gly Ala Gly Ala Thr
 275 280 285
 Asp Gly Ala Met Asp Ala Ala Asn Leu Leu Lys Pro Ala Leu Ala Arg
 290 295 300
 Gly Thr Leu His Cys Ile Gly Ala Thr Thr Leu Asn Glu Tyr Gln Lys
 305 310 315 320
 Tyr Ile Glu Lys Asp Ala Ala Leu Glu Arg Phe Gln Pro Ile Phe
 325 330 335
 Val Thr Glu Pro Ser Leu Glu Asp Ala Val Phe Ile Leu Arg Gly Leu
 340 345 350
 Arg Glu Lys Tyr Glu Ile Phe His Gly Val Arg Ile Thr Glu Gly Ala
 355 360 365
 Leu Asn Ala Ala Val Leu Leu Ser Tyr Arg Tyr Ile Pro Asp Arg Phe
 370 375 380
 Leu Pro Asp Lys Ala Ile Asp Leu Ile Asp Glu Ala Ala Ser Leu Ile
 385 390 395 400
 Arg Met Gln Ile Gly Ser Leu Pro Leu Pro Ile Asp Glu Lys Glu Arg
 405 410 415
 Glu Leu Ala Ala Leu Ile Val Lys Gln Glu Ala Ile Lys Arg Glu Gln
 420 425 430
 Ser Pro Ser Tyr Gln Glu Glu Ala Asp Ala Met Gln Lys Ser Ile Asp
 435 440 445
 Ala Leu Arg Glu Glu Leu Ala Ser Leu Arg Leu Gly Trp Asp Glu Glu
 450 455 460
 Lys Lys Leu Ile Ser Gly Leu Lys Glu Lys Lys Asn Ser Leu Glu Ser
 465 470 475 480
 Met Lys Phe Ser Glu Glu Glu Ala Glu Arg Val Ala Asp Tyr Asn Arg

485 490 495
 Val Ala Glu Leu Arg Tyr Ser Leu Ile Pro Gln Leu Glu Glu Glu Ile
 500 505 510
 Lys Gln Asp Glu Ala Ser Leu Asn Gln Arg Asp Asn Arg Leu Leu Gln
 515 520 525
 Glu Glu Val Asp Glu Arg Leu Ile Ala Gln Val Val Ala Asn Trp Thr
 530 535 540
 Gly Ile Pro Val Gln Lys Met Leu Glu Gly Glu Ala Glu Lys Leu Leu
 545 550 555 560
 Ile Leu Glu Glu Ser Leu Glu Glu Arg Val Val Gly Gln Pro Phe Ala
 565 570 575
 Val Ser Ala Val Ser Asp Ser Ile Arg Ala Ala Arg Val Gly Leu Asn
 580 585 590
 Asp Pro Gln Arg Pro Leu Gly Val Phe Leu Phe Leu Gly Pro Thr Gly
 595 600 605
 Val Gly Lys Thr Glu Leu Ala Lys Ala Leu Ala Asp Leu Leu Phe Asn
 610 615 620
 Lys Glu Glu Ala Met Val Arg Phe Asp Met Ser Glu Tyr Met Glu Lys
 625 630 635 640
 His Ser Ile Ser Lys Leu Ile Gly Ser Ser Pro Gly Tyr Val Gly Tyr
 645 650 655
 Glu Glu Gly Gly Ser Leu Ser Glu Ala Leu Arg Arg Arg Pro Tyr Ser
 660 665 670
 Val Val Leu Phe Asp Glu Ile Glu Lys Ala Asp Lys Glu Val Leu Asn
 675 680 685
 Ile Leu Leu Gln Val Phe Asp Asp Gly Ile Leu Thr Asp Gly Lys Lys
 690 695 700
 Arg Lys Val Asn Cys Lys Asn Ala Leu Phe Ile Met Thr Ser Asn Ile
 705 710 715 720
 Gly Ser Pro Glu Leu Ala Asp Tyr Cys Ser Lys Lys Gly Ser Glu Leu
 725 730 735
 Thr Lys Glu Ala Ile Leu Ser Val Val Ser Pro Val Leu Lys Arg Tyr
 740 745 750
 Leu Ser Pro Glu Phe Met Asn Arg Ile Asp Glu Ile Leu Pro Phe Val
 755 760 765
 Pro Leu Thr Lys Glu Asp Ile Val Lys Ile Val Gly Ile Gln Met Arg
 770 775 780
 Arg Ile Ala Gln Arg Leu Lys Ala Arg Arg Ile Asn Leu Ser Trp Asp
 785 790 795 800
 Asp Ser Val Ile Leu Phe Leu Ser Glu Gln Gly Tyr Asp Ser Ala Phe
 805 810 815
 Gly Ala Arg Pro Leu Lys Arg Leu Ile Gln Gln Lys Val Val Ile Leu
 820 825 830
 Leu Ser Lys Ala Leu Leu Lys Gly Asp Ile Lys Pro Asp Thr Ser Ile
 835 840 845
 Glu Leu Thr Met Ala Lys Glu Val Leu Val Phe Lys Lys Val Glu Thr
 850 855 860
 Pro Ser
 865

<210> 114
 <211> 1179
 <212> DNA
 <213> Homo sapiens

<400> 114

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gcttttttct gaagaatctc atcaagagat atttgcattt tcccacggat aaaggcatcc 120
caaggaagcc ctggaatcac ttcattattt cccgttgcta gcattcgaca agggaaacca 180
aagattaaat cttccggtaa tccataggga ttgtggtcgg aacacactcc ggaagaaaac 240
cattctcctt cttttggctg atatattgat cgagcagcct ctgctaaagc tcgtgctgca 300
gaagctgccc aagacttccc tcgtgcttcg attactgcac taccacgact ctgtacagaa 360
ggcaccataa tattctctaa ccaatcacga tccgctatcg tctctgcgat aggacggta 420
ttaatcagag cttgcgtaaa atcaggcact tgtttggcgg agtgatttcc ccaaaccaca 480
acttgtgata cagccgataa aggtacttct gctctatgcg ataactgct atgcatacga 540
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ttggctgttg tgttcaaagc ttttccttgc gtacgcaaaa tctcccatc tttctttaga 720
agatcccttc tctccattcc tgggctctca ggaactgacc ctataaggaa tgccgcatca 780
atgccatcaa aagcatcatg caatgatgtc gttacctgca cacgctgtaa taaagggaaa 840
gcaccatcat ctagctccat gcgcacacca gataaagccc tttctgttcc aggaatatcg 900
tagatacgca gatcgatgcc acaatcaagg ccaaaaacat ctccatgagc cagagaaaat 960
agaaagctat aggtattttg cctgttctct cctgttactg ctacactcac tgtttgagaa 1020
accataagcc accctctctt tactttttaca aaacgcacat actctcaaca ctacgtttgc 1080
aactaactaa ttttggtccc aacatacgtt tggatgataa aagaatcaag tacctagatt 1140
ccttagtaaa agcttttggc aaaaaaaagc tcattctatt 1179

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<210> 115
 <211> 772
 <212> DNA
 <213> Homo sapiens

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<400> 115
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tctatacaga aggtattacg aatgtaacag ctggagcaaa tccaatggac ctcaaacgag 120
gtattgataa agctgttaag gttgttggtg atcaaatcag aaaaatcagc aaacctgttc 180
agcatcataa agaaattgct caagttgcaa caatttctgc taataatgat gcagaaatcg 240
ggaatctgat tgctgaagca atggagaaaag ttggtaaaaa cggctctatc actgttgaa 300
aagcaaaagg atttgaacc gttttggatg ttgttgagg aatgaatttc aatagaggtt 360
acctctctag ctacttcgca acaaatccag aaactcaaga atgtgtatta gaagacgctt 420
tggttctaata ctacgataag aaaatttctg ggatcaaaga tttccttctt gttttacaac 480
aagttgctga atccggccgt cctcttctta ttatagcaga agacattgaa ggcaagctt 540
tagctacttt ggtcgtgaac agaattcgtg gaggattccg gggttgcgca gttaaagctc 600
caggcttttg agatagaaga aaagctatgt tggaaagacat cgctatctta actggcggtc 660
aactcattag cgaagagttg ggcatgaaat tagaaaacgc taacttagct atgttaggta 720
aagctaaaaa agttatcgtt tctaaggaaag acacgaccat cgtcgaagga at 772

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<210> 116
 <211> 487
 <212> DNA
 <213> Homo sapiens

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<400> 116
gcagctcctg caaagccaca agctcctgtc gcacaaacac ggcatthtaa aaagagccat 60
cagattttct ctcttaattt tacgcagtct tcccaacagg tgaataaacc tgaggaaaga 120
agacgtcctt tggagtctcg atacttacaa ggcgcgcta agcaggcagc tgctgcaaag 180
gaaaaaaagg ctcttgaaca ggaagtatcc aaacaagaag aagaagcttc taaactctgg 240
gaagagaaac agagttatgc tcgtcgtgct gtgaatgcc acaatttcag tgtaagaaag 300
caaatagaag agcaacagaa aaccatttcc aatccaggaa atgaccagac tcttctctgg 360
aagaaagatc cacatacatc cggagaacct gttatccaaa cggtaacaaga ctgttctcag 420
gatcaagaag aagagaaaaa agttctagag cgattaaaca aacgttctct gacgtgtcag 480

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gatctta

487

<210> 117
 <211> 1014
 <212> DNA
 <213> Homo sapiens

<400> 117
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 agcgctttct attaaaagaa accctattca gaccctatgc agcacatagt ttataaaaaa 120
 atttttctat taacagagga aaaataacct attgataaac agagcggtac aaggagatgc 180
 aaataaagct gcttttaggat ccttacctag attctagaaa atgggttgcac gaatttgaac 240
 aaacaaacta attaaaaatt aaaactgaaa aaaatagttt aaaacaacaa ctagaggata 300
 ttttttcatg gcgctaataa atacggcaaa aaaaatgact gacttggttg aaagtatcca 360
 acaaaatttg cttaaaagcag aaaaaggaaa taaagccgca gcacaaagag ttctgtacaga 420
 atctatcaaa ttagaaaaga tcgcgaaggt atatcgtaaa gagtccatta aagcagaaaa 480
 aatgggctta atgaaaaaaa gcaaagccgc tgctaaaaaa gctaaagctg ctgctaagaa 540
 gcctgttcgc gctacaaaaa cagtggctaa aaaagcttgt acaaaaagaa cttgtgtcac 600
 taaagcaaaag gtcaaaccac caaaaaaagc cgctcctaaa acaaaaagta aaacagcgaa 660
 aaaaactcgc tcaacaaaaa aataatatat tagcgctttc tcttttttat agagggcact 720
 tttatcaaca gggccctctt tctctttctc attgatccct tctctttttt ttgttatcct 780
 ttccgttctc gcaaaggcaa gtccttgcaa ataaaagtac aacctcacac ctcccttgga 840
 ggaaaaacct ttcactttct ttaggattca agttgtctct ctgctatcgt aactgtaaac 900
 attttggcgt ctgtggaggc tgttcatctc ctcaaagtga atatgcatcc tctttaaaaa 960
 caaaagagct tgcgctccat aatttatatt cacctcttat cccatcccaa aata 1014

<210> 118
 <211> 287
 <212> DNA
 <213> Homo sapiens

<400> 118
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 gaacaaacaa actaattaaa aaltaaaact gaaaaaaata gtttaaaaca acaactagag 120
 gatatttttt catggcgcta aaagatacgg caaaaaaat gactgacttg ttggaaagta 180
 tccaacaaaa tttgcttaaa gcagaaaaag gaaataaagc cgcagcacia agagttcgta 240
 cagaatctat caaattagaa aagatcgcca aggtatatcg taaagag 287

<210> 119
 <211> 1002
 <212> DNA
 <213> Homo sapiens

<400> 119
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 taccogtcta ttaatccttc taacgataat caatacggtc ttgtgcaatc gacctctggg 120
 cctaattacg gaggccatac ggtatcttct cgaggaggat ttcaagggat atgcgtacga 180
 atagccgatt tattccgtaa ctgtttctct cgtaatagag gcactactac tacgccatct 240
 cgaactgcta tcaactcaggc agatatattat catccgacta tttctggaca aggagctcaa 300
 cctattgtct ctacaggaga taagaaatta gatagcgcaa ttattcaagc agatttgctg 360
 gcgcagaata aacagacttt ggctacacat attcaaaagta agctagggtt tatggaggga 420
 caatctcttc aagattataa agctgggtgcg tatagtgcgc taagattgat gctgtttact 480
 ccaggcgaaa ctactgtgag tagcgagcgg gaacgtcaag cgtgcgttac gggtcgggat 540
 ctctgggaac aggctgcagg agatcttgct accaatggga atacagatgg gcttatgtta 600
 atggctaacc tatctgtggg agggaagcat gtgcctgcgg ggcatttaag agaatacatg 660
 gatactgtaa agggtagctt tactgatgag aacgaggcta cagatcctac ggtagatgcc 720

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atTTtagatt tagcagcaaa aatcgatgcg acggaattct ctagtcttg ttcagggcaa 780
gtcattctta attatatagg aaattatgga caagtctgtt tagaaaacga ggagatgaac 840
cttcttggtt tagaagatca aaatgggcaa gatcctcaac gtgttcaaga taactcaaaa 900
gagttacaaa aactgttaga aaatgctcga aaaacagatc ctgagttata tttccaaaca 960
ctaactgtca taacttcttc tgttttctta gactaaggat cc 1002

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<210> 120
 <211> 1218
 <212> DNA
 <213> Homo sapiens

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<400> 120
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gagggatttt ctagtgcac tccaggcgat gagattgatg atgtaccaga tagtgaagag 120
ggagagctag aagagcgcgt ttcggatcat gcagagtcta tcattaccga gagctcgaa 180
acgctgtttc gtactacttc ttcacagagg gtcagtgaag atcttcagca acacgttagc 240
ttggaggaat ctccacgaca acgaggtttc cttggacgga tccgtgatgc agtagcttct 300
atttgggaagc gtcgtgttgc acgaaggaat gaaaaactatg atgtgaaaaa agcagaagag 360
cagcaaggga ttgtgcaata tctgcaggat tcgaaaatgc ctgctttaac gcgtgcctat 420
cgccatctcc gtgctttcaa ttctgcatgc ttacgtacga ttcgtgagtt tttcgtacc 480
atttttagtc ctttaaggga tgcgtattat cgacattgta cacgttctgg gatcaacttt 540
tgtggagctg ataaagactc tttagaagtt cttgttgagg tgggtttgct tttgcgtatg 600
gctacettac gctcttttga acatgtcggg ggggaattacg aagatcgatt agtaaataat 660
gatgctccgg tgacagggtc ggggagaact cttgttgatg atgctgtaga cgatattgaa 720
tcgattttaa atacgagaac caactggcct caacatgtca tgatagggtt ttctcgtggg 780
ctcgttcaat tatgtgcgac tctttataat gcgacttctc aagaatgttt caagtcgatt 840
gttcgttttag aaaaagaaga ccttcttcca gattattctc aagctttatt attagcaggg 900
ataatagatc gcttggcgga gaaagccct atgggtgcaa agtatgtttt ggatgcattg 960
cgtgttcgaa cttcgagct cataggagaa ctcattatc tcgatttgc tctcctgta 1020
tggaagggtg gccgcggagg cgtattccct cctgtgaatg agcagctcgt tgtgcaaatt 1080
gttaatgcaa acgtagaacg attgcattcc actttcgtc atgagccaca agcttatttg 1140
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tcggttgga atatctaa 1218

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<210> 121
 <211> 726
 <212> DNA
 <213> Homo sapiens

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<400> 121
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cctactgtgc gtttcgatca aacggttgat gtgtctgtta aattagggat cgatccaaga 180
aagagtgatc agcaaattcg ttgttcggtt tctttacctc acggtacagg taaagttttg 240
cgaatttttag ttttgctgc tggagataag gctgcagagg ctattgaagc aggagcggac 300
tttgttggtg gcgacgactt ggtagaaaaa atcaaagggt gatgggttga cttcgatgtt 360
gcggttgcca ctcccgatat gatgagagag gtcggaaaagc taggaaaagt tttaggtcca 420
agaaacctta tgcctacgcc taaagccgga actgtaacaa cagatgtggt taaaactatt 480
gcggaactgc gaaaaggtaa aattgaattt aaagtgtatc gagctggtgt atgcaacgtc 540
ggagttgcga agctttcttt cgatagtgcg caaatcaaaag aaaaatgttg agcgttgtgt 600
gcagccttag ttaaagctaa gcccgcaact gctaaaggac aatatttagt taatttcaact 660
atttcctcga ccatggggcc aggggttacc gtggatacta gggagttgat tgcgttataa 720
gaattc 726

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<210> 122
 <211> 330
 <212> PRT
 <213> Homo sapiens

<400> 122

Met	His	His	His	His	His	His	Met	Ser	Ile	Arg	Pro	Thr	Asn	Gly	Ser
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Gly	Asn	Gly	Tyr	Pro	Ser	Ile	Asn	Pro	Ser	Asn	Asp	Asn	Gln	Tyr	Gly
			20					25					30		
Leu	Val	Gln	Ser	Thr	Ser	Gly	Pro	Asn	Tyr	Gly	Gly	His	Thr	Val	Ser
			35					40				45			
Ser	Arg	Gly	Gly	Phe	Gln	Gly	Ile	Cys	Val	Arg	Ile	Ala	Asp	Leu	Phe
	50					55					60				
Arg	Asn	Cys	Phe	Ser	Arg	Asn	Arg	Gly	Thr	Thr	Thr	Thr	Pro	Ser	Arg
	65				70					75					80
Thr	Val	Ile	Thr	Gln	Ala	Asp	Ile	Tyr	His	Pro	Thr	Ile	Ser	Gly	Gln
				85					90					95	
Gly	Ala	Gln	Pro	Ile	Val	Ser	Thr	Gly	Asp	Lys	Lys	Leu	Asp	Ser	Ala
			100					105					110		
Ile	Ile	Gln	Ala	Asp	Leu	Arg	Ala	Gln	Asn	Lys	Gln	Thr	Leu	Ala	Thr
		115					120					125			
His	Ile	Gln	Ser	Lys	Leu	Gly	Ser	Met	Glu	Gly	Gln	Ser	Pro	Gln	Asp
	130					135					140				
Tyr	Lys	Ala	Gly	Ala	Tyr	Ser	Ala	Leu	Arg	Leu	Met	Leu	Phe	Thr	Pro
	145				150					155					160
Gly	Glu	Thr	Thr	Val	Ser	Ser	Glu	Arg	Glu	Arg	Gln	Ala	Cys	Val	Thr
				165					170					175	
Gly	Arg	Asp	Leu	Trp	Glu	Gln	Ala	Ala	Gly	Asp	Leu	Ala	Thr	Asn	Gly
			180					185					190		
Asn	Thr	Asp	Gly	Leu	Met	Leu	Met	Ala	Asn	Leu	Ser	Val	Gly	Gly	Lys
		195					200					205			
His	Val	Pro	Ala	Gly	His	Leu	Arg	Glu	Tyr	Met	Asp	Thr	Val	Lys	Gly
	210					215					220				
Thr	Phe	Thr	Asp	Glu	Asn	Glu	Ala	Thr	Asp	Pro	Thr	Val	Asp	Ala	Ile
	225				230					235					240
Leu	Asp	Leu	Ala	Ala	Lys	Ile	Asp	Ala	Thr	Glu	Phe	Ser	Ser	Pro	Gly
				245					250					255	
Ser	Gly	Gln	Val	Ile	Leu	Asn	Tyr	Ile	Gly	Asn	Tyr	Gly	Gln	Val	Val
			260					265					270		
Leu	Glu	Asn	Glu	Glu	Met	Asn	Leu	Leu	Val	Leu	Glu	Asp	Gln	Asn	Gly
		275					280					285			
Gln	Asp	Pro	Gln	Arg	Val	Gln	Asp	Asn	Ser	Lys	Glu	Leu	Gln	Lys	Leu
	290					295					300				
Leu	Glu	Asn	Ala	Arg	Lys	Thr	Asp	Pro	Glu	Leu	Tyr	Phe	Gln	Thr	Leu
	305				310					315					320
Thr	Val	Ile	Thr	Ser	Ser	Val	Phe	Leu	Asp						
				325					330						

<210> 123
 <211> 405
 <212> PRT
 <213> Homo sapiens

<400> 123

Met His His His His His His Val Ser Ser Ile Ser Pro Ile Gly Gly

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 Asn Ser Gly Pro Glu Gly Phe Ser Ser Ala Ser Arg Gly Asp Glu Ile
 20 25 30
 Asp Asp Val Pro Asp Ser Glu Glu Gly Glu Leu Glu Glu Arg Val Ser
 35 40 45
 Asp His Ala Glu Ser Ile Ile Thr Glu Ser Ser Glu Thr Leu Phe Arg
 50 55 60
 Thr Thr Ser Ser Ser Gly Val Ser Glu Asp Leu Gln Gln His Val Ser
 65 70 75 80
 Leu Glu Glu Ser Pro Arg Gln Arg Gly Phe Leu Gly Arg Ile Arg Asp
 85 90 95
 Ala Val Ala Ser Ile Trp Lys Arg Arg Val Ala Arg Arg Asn Glu Asn
 100 105 110
 Tyr Asp Val Lys Lys Ala Glu Glu Gln Gln Gly Ile Val Gln Tyr Leu
 115 120 125
 Gln Asp Ser Lys Met Pro Ala Leu Thr Arg Ala Tyr Arg His Leu Arg
 130 135 140
 Ala Phe Asn Ser Ala Cys Leu Arg Thr Ile Arg Glu Phe Phe Ala Thr
 145 150 155 160
 Ile Phe Arg Ala Leu Arg Asp Ala Tyr Tyr Arg His Cys Thr Arg Ser
 165 170 175
 Gly Ile Asn Phe Cys Gly Ala Asp Lys Asp Ser Leu Glu Val Leu Val
 180 185 190
 Ala Val Gly Leu Leu Leu Arg Met Ala Thr Leu Arg Ser Phe Glu His
 195 200 205
 Val Gly Gly Asn Tyr Glu Asp Arg Leu Val Asn Asn Asp Ala Pro Val
 210 215 220
 Thr Gly Ala Gly Arg Thr Leu Val Asp Asp Ala Val Asp Asp Ile Glu
 225 230 235 240
 Ser Ile Leu Asn Thr Arg Thr Asn Trp Pro Gln His Val Met Ile Gly
 245 250 255
 Phe Ser Arg Gly Leu Val Gln Leu Cys Ala Thr Pro Tyr Asn Ala Thr
 260 265 270
 Ser Gln Glu Cys Phe Lys Ser Ile Val Arg Leu Glu Lys Glu Asp Pro
 275 280 285
 Ser Ser Asp Tyr Ser Gln Ala Leu Leu Leu Ala Gly Ile Ile Asp Arg
 290 295 300
 Leu Ala Glu Lys Ala Pro Met Ala Ala Lys Tyr Val Leu Asp Ala Leu
 305 310 315 320
 Arg Val Arg Thr Ser Glu Leu Ile Gly Glu Leu Ile Ile Leu Asp Leu
 325 330 335
 Leu Pro Pro Val Trp Lys Val Gly Arg Gly Gly Val Phe Pro Pro Val
 340 345 350
 Asn Glu Gln Leu Val Val Gln Ile Val Asn Ala Asn Val Glu Arg Leu
 355 360 365
 His Ser Thr Phe Ala His Glu Pro Gln Ala Tyr Leu Arg Met Ile Glu
 370 375 380
 Gly Leu Val Thr Asn Phe Phe Phe Leu Pro Ser Glu Glu Asp Pro Ser
 385 390 395 400
 Ser Val Gly Asn Ile
 405

<210> 124
 <211> 238
 <212> PRT
 <213> Homo sapiens

<400> 124

Met His His His His His Thr Lys His Gly Lys Arg Ile Arg Gly
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 Ile Gln Glu Thr Tyr Asp Leu Ala Lys Ser Tyr Ser Leu Gly Glu Ala
 20 25 30
 Ile Asp Ile Leu Lys Gln Cys Pro Thr Val Arg Phe Asp Gln Thr Val
 35 40 45
 Asp Val Ser Val Lys Leu Gly Ile Asp Pro Arg Lys Ser Asp Gln Gln
 50 55 60
 Ile Arg Gly Ser Val Ser Leu Pro His Gly Thr Gly Lys Val Leu Arg
 65 70 75 80
 Ile Leu Val Phe Ala Ala Gly Asp Lys Ala Ala Glu Ala Ile Glu Ala
 85 90 95
 Gly Ala Asp Phe Val Gly Ser Asp Asp Leu Val Glu Lys Ile Lys Gly
 100 105 110
 Gly Trp Val Asp Phe Asp Val Ala Val Ala Thr Pro Asp Met Met Arg
 115 120 125
 Glu Val Gly Lys Leu Gly Lys Val Leu Gly Pro Arg Asn Leu Met Pro
 130 135 140
 Thr Pro Lys Ala Gly Thr Val Thr Thr Asp Val Val Lys Thr Ile Ala
 145 150 155 160
 Glu Leu Arg Lys Gly Lys Ile Glu Phe Lys Ala Asp Arg Ala Gly Val
 165 170 175
 Cys Asn Val Gly Val Ala Lys Leu Ser Phe Asp Ser Ala Gln Ile Lys
 180 185 190
 Glu Asn Val Glu Ala Leu Cys Ala Ala Leu Val Lys Ala Lys Pro Ala
 195 200 205
 Thr Ala Lys Gly Gln Tyr Leu Val Asn Phe Thr Ile Ser Ser Thr Met
 210 215 220
 Gly Pro Gly Val Thr Val Asp Thr Arg Glu Leu Ile Ala Leu
 225 230 235

<210> 125

<211> 713

<212> DNA

<213> Chlamydia trachomatis

<400> 125

ataacaatcc ctcccaatca tcgttgaacg tacaaggagg agccatctat gccaaaacot 60
 ctttgtctat tggatcttcc gatgctggaa cctcctatat tttctcgggg aacagtgtct 120
 ccactgggaa atctcaaaca acagggcaaa tagcgggagg agcgatctac tcccctactg 180
 ttacattgaa ttgtcctgcg acattctcta acaatacagc ctctatagct acaccgaaga 240
 cttcttctga agatggatcc tcaggaaatt ctattaaaga taccattgga ggagccattg 300
 cagggacagc cattacccta tctggagtct ctcgattttc aggggaatacg gctgatttag 360
 gagctgcaat aggaactcta gctaattgcaa atacaccagc tgcaactagc ggatctcaaa 420
 atagcattac agaaaaaatt actttagaaa acggttcttt tatttttgaa agaaccaag 480
 ctaataaacg tggagcgatt tactctccta gcggtttccat taaagggaat aatattacct 540
 tcaatcaaaa tacatccact catgatggaa gcgctatcta ctttacaaaa gatgctacga 600
 ttgagtcctt aggatctgtt ctttttacag gaaataacgt tacagctaca caagctagtt 660
 ctgcaacatc tggacaaaat acaataactg ccaactatgg ggcagccatc ttt 713

<210> 126

<211> 780

<212> DNA

<213> Chlamydia trachomatis

<400> 126

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ttaactaaca agcataactca ttctggattt cattgcctcc taaaattcct agtcaaattcc 120
gaaagaagcc gacactcgag cgctcttctc ctaaaaatct tgttttttct ctgcttccga 180
gttataacgc ggctgtctca taaccacac taacatgatg aaacctctac gtttcgggta 240
tttcttttgc acaatctatt ttactttggt acaggcagcg ttgctaaag aaccgaattc 300
ttgtcccgac tgccagaata attggaaaga agtcacccac acggatcaac tccctgaaaa 360
catcattcat gctgatgatg cttgttatca ctctggttat gtacaggctc tcattgatat 420
gcatttctta gatagctgct gccaggctcat cgttgaaaac caaactgctt acttattttc 480
tcttcctaca gatgatgta cgcgcaacgc cattatcaac ctaattaaag accttccatt 540
cattcaactcc gtagaaatct gccaaagcat ctatcaaacc tgtcatcatc aaggccctca 600
tggaagaact tctcttccag aacaacgttc tttctgtaca aaggctctgtg gaaaagaagc 660
tatttggtta ccacagaata ccatcctatt ctgcctctt gtagcagata ctatccaagc 720
aactaatagt gcaggtatcc gttttaacga cgaagtcgta ggaaaacgtg ttggctctgc 780

```

<210> 127

<211> 433

<212> DNA

<213> Chlamydia trachomatis

<400> 127

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ctttaaagat tcgtcgtcct tttggtaact cgagagaagt tcgtgtgaaa tggcgttatg 60
ttcctgaagg tgtaggagat ttggctacca tagctccttc tatcagggtc ccacagttac 120
agaaatcgat gagaagcttt ttccctaaga aagatgatgc gtttcatcgg tctagttcgc 180
tattctactc tccaatggtt ccgcattttt gggcagagct tcgcaatcat tatgcaacga 240
gtggtttgaa aagcgggtac aatattggga gtaccgatgg gtttctccct gtcattgggc 300
ctggttatatg ggagtcggag ggtcttttcc gcgcttatat ttcttcggtg actgatgggg 360
atggttaagag ccataaagta ggatttctaa gaattcctac atatagttgg caggacatgg 420
aagattttga tcc                                     433

```

<210> 128

<211> 803

<212> DNA

<213> Chlamydia trachomatis

<400> 128

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atctattaat taatagcaag cttgaaacta aaaacctaatt ttattttaaag ctcaaaaataa 60
aaaagagttt taaaatggga aattcttggt tttatttgta taactactgaa aactgcgtct 120
ttgctgataa tatcaaagt gggaatga cagagccgct caaggaccag caaataatcc 180
ttgggacaac atcaacacct gtgcagacca aaatgacagc ttctgatgga atatctttaa 240
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cttaccagct tattctagaa aagttgggag atcaaatctt tgatggaatt gctgatacta 360
ttgttgatag tacagtccaa gatatttttag acaaaatcaa aacagaccct tctctaggtt 420
tggtgaaagc ttttaacaac tttccaatca ctaataaaat tcaatgcaac ggggttattca 480
ctcccagtaa cattgaaact ttattaggag gaactgaaat aggaaaattc acagtacac 540
ccaaaagctc tgggagcatg ttcttagtct cagcagatat tattgcatca agaattggaag 600
gcggcgttgt tctagctttg gtacgagaag gtgattctaa gccctgcgcg attagttatg 660
gatactcatc aggcattcct aatttatgta gtctaagaac cagtattact aatacaggat 720
tgactccgac aacgtattca ttacgtgtag gcggtttaga aagcgggtgtg gtatgggtta 780
atgcoccttc taatctcgtg ccg                                     803

```

<210> 129

<211> 842

<212> DNA

<213> Chlamydia trachomatis

<400> 129

```

tgggaatgtc gaagaatacg attacgttct cgtatctata ggacgccgtt tgaatacaga 60
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tgccacaatg cgcacaaacg tacctaacat ttatgctatt ggagatatca caggaaaatg 180
gcaacttggc catgtagctt ctcacaaagg aatcattgca gcacggaata tagctggcca 240
taaagaggaa atcgattact ctgccgtccc ttctgtgata tttaccttcc ctgaagtgcg 300
ttcagtaggc ctctcccaaa cagcagctca acaacaaaaa atccccgtca aagtaacaaa 360
attcccatth cgagctattg gaaaagcggg cgcaatgggc gaggcgatg gatttgcagc 420
cattatcagc catgagacta ctcagcagat cctaggagct tatgtgattg gccctcatgc 480
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ttacgaaact atccacgcac atccaacctt agcagaagtt tgggctgaaa gtgcgttgtt 600
agctgctgat accccattac atatgcccc tgctaaaaaa tgaccgattc agaattctct 660
actcctaataa aatctatacc cgcagattc cctaagtggc tacgccagaa actcccttta 720
ggcggggtat ttgctcaaac tgataatact atcaaaaata aagggtctcc tacagtctgt 780
gaggaagcct cttgtccgaa tcgcacccat tgttgggtcta gacatacagc tacctatcta 840
gc

```

<210> 130

<211> 813

<212> DNA

<213> Chlamydia trachomatis

<400> 130

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aaaatacttt gagctgcaca agtccccccc tgttctagag aagaacatga tgcaaatcc 60
aatccaccct taatcttttc aaagataaga tcttctgtag aatataaagc cgctccagac 120
aaagaagctt tcacgtcagt taatgtgatt ccagccttac tactatcccc aacaaaagca 180
atacctaataa aagattctcc gtcacgagga gaatcaagg tgetgctcgt aaaactacaa 240
attaaccctt gggaagagac ttgatcctgt tgggccacac cttggaaaac tacgggattg 300
gttactgaga acaaagtact ttgctctacc ttaccgggaa gagtatccgc atctttctct 360
tggaagaagc ttggatctcc tacaattaac ctatactgtc cttcagcctg actatcttta 420
gacccaacga atagatctcg aatttggctt aacaataaaa ccgcttgagg gcctacatat 480
accagctcat ttacagactg tcctccagca tgaagatcta cgcaactagc taacccgcta 540
acagaggcaa ggatagctgc tactacagac aaagaaaact tagaacaggt gctttttata 600
tctttctcgg aactcatttc aaacctgcga aatagcactt ttttgacaaa ctagcgtacc 660
gaaacaatcg gtcacaacgc cgttctgccc tatgatttca caaagacaaa acgacccata 720
gacaagctcc agagacgaca ttagagcttt agaccgtgga atgtacaatg ctgactgctt 780
tttgagaaag attttttata aagaacaggc cct

```

<210> 131

<211> 1947

<212> DNA

<213> Chlamydia trachomatis

<400> 131

```

tcttttgcct atagagcaat ctcttatcat tgggtctgat ccaccagact atttcttcta 60
gatagagatt ctactacccc atccatggca ttcaacctct catcagtaaa cactttatta 120
gagttgttta tctgcccatc atcgatgata tcttctgaag tctttaatac cttcttacat 180
aagatccatc tctccggaga acagtgtcct tctatggata aaattcctac gcagatattc 240
acgcatccca aaatagcagg aatacctaga tagatggcat ttacaaacga agctgccgaa 300
actaggaata tcaaagcagt aatcactaaa agtagtecta tcaccactaa tcccacctta 360
aatgcagtgg aagatagaag attcgatata cgctctttca gtgttaatgg tgcagaacta 420
gtggaaatat cctgtgccga attggaagat ccagctcctt gaacaacggg tacagtgtct 480
atattttaca ttcctttttt ggttgtgagc agggagtcta cacaaacact tatttttttc 540

```

aaaaaccogt ctagaatatg ctctgagacc gaaaatgaac tcttttattt tcatatagat 600
 aacaaaaaaa agccgcccag gaatccctgg acggcaccta cacatcgata aaatcaaaga 660
 ttaatatagtg tgtgtattct ctgtatcaga aactggaaca gtcaatgtat cggaagaaag 720
 aatcgcttcc ccacgagcat ctccagctga tactgcttcc aatgttacag aaaactctac 780
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 taagcggtea attttccaaa ctagcttacc atcagcagta ggagttgtcg ctggatcact 1860
 gcgtacgaac tctgtttcac atggtaattg ctgagtaatg ataacatcaa cacaatccct 1920
 tttacctgta gcagtaattt caatagg 1947

<210> 132

<211> 1278

<212> DNA

<213> Chlamydia trachomatis

<400> 132

gataacaaaa aaaagccgcc caggaatccc tggacggcac ctacacatcg ataaaaatcaa 60
 agattaatag atgtgtgtat tctctgtatc agaaactgga acagtcaatg tatcggaaga 120
 aagaatcgct tccccacgag catctccagc tgatactgct ttcaatgtta cagaaaactc 180
 tacagtttct ttagaaccta atctaggtaa cgaatcgaat actactgtat tgctgtaat 240
 cgttccttta gttggtccag agaaggatac aggttgagct tctttagaga atttaagcat 300
 taaagaaaaca tttgtatctt ctgcagaacc tctgttggtg acacaaatc ggtaaaccagt 360
 attttctcct acacaaacag ggtcacaaagt atctactacg cacatatgag tagcagcaac 420
 tcctttccag taagttgtcg cttctgcgca agaagtacaa gtaccacagt cagagcagct 480
 cttcacaaca acattatttg tgaattgtcc aggagtttgt gctcttacta gaactttata 540
 ctgtagagac tctccaggat tcagttcttt cacagtccaa actactttat tacaagaaat 600
 ttgagctcct gcagcttcaa gaactgtgac tccgggagaa agagtgtctt caacgcagac 660
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 aacataagac caatctgtct ctgcaatact tacttgtag caaggctcat tgatcacagt 780
 tgttacgctt gctgtatttt tatgtcctcc acagtaagaa accgttgcta tattggtagc 840
 acgaccagct ttaagcggac aaaactctac agtaattgtt ctgtgctctc caggttgcac 900
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 aaagcagcaa ccttctttta gaggttttac ccatacagta attttactct tttcgcttg 1200
 tctaagcgg tcaattttcc aaactagctt accatcagca gtaggagttg tcgctggatc 1260
 actgcgtacg aactctgc 1278

<210> 133

<211> 916

<212> DNA

<213> Chlamydia trachomatis

<400> 133

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ggccagttct tcaaaattat gccttcattt cagcaggaga gacacttact ctgaaagatt 120
tttcgagttt gatgttctcg aaaaatgttt ctgtcggaga aaagggaatg atctcagga 180
aaacogtgag tatttcogga gcaggcgaag tgattttttg ggataactct gtgggggtatt 240
ctcctttgtc tattgtgcca gcatcgactc caactcctcc agcaccagca ccagctcctg 300
ctgcttcaag ctctttatct ccaacagtta gtgatgctcg gaaagggctt attttttctg 360
tagagactag tttggagatc tcaggcgtca aaaaaggggt catgttcgat aataatgccg 420
ggaatttttg aacagttttt cgaggtaata gtaataataa tgctggtagt gggggtagtg 480
ggtctgctac aacaccaagt tttacagtta aaaactgtaa agggaaagt tctttcacag 540
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atgaaggagg catattcttc cgagggaaca cagcatacga tgatttaggg attcttgctg 660
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aaggcagagg cggaagcatc ctaacgaaag aattctctct ttagtcagat gattcgggtg 840
tctttagtaa caatacagca gaaaaaggcg gtggagctat ttatgctcct acgtatcgat 900
ataagcacga atggag                                     916

```

<210> 134

<211> 751

<212> DNA

<213> Chlamydia trachomatis

<220>

<221> misc_feature

<222> 741

<223> n = A,T,C or G

<400> 134

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agcctctggc gaaggagagc cataaaaagt gcctaccagc ggagaaacaa taaaatctcc 60
ctgagcaggc acctcacttt ctttcttctc gatactctct ttaacaatag gattcccaag 120
gttttgatct gaggataagt tttgaaatcc agcaaacagt ctgttatcat aaaagactgg 180
ctcctgaata cttgggactg tatccctttc taactctaac tccaaacctt cagccttgat 240
aacaatgcgc ttcacgtgcc gaattcggca cagagctctt tcttacgagg atctcgagtc 300
aagaagcctt gagccttcaa ttottgcttc atgtcttctt tctcttgag aacagctcta 360
gctaaaccca atcgagtagc aataacctga ccttgaaccc ctctccact tactcggata 420
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atattctttg tcacaaatta ccccaaatga cgcgtctaaa acaattgggt tgatagcttc 660
atactgtgcg taagaactac ctttcaaaac tcttaaagat ttcatttgac gtcttccaag 720
ttttgtttta ggcaacattc nttaacagca t                                     751

```

<210> 135

<211> 410

<212> DNA

<213> Chlamydia trachomatis

<400> 135

```

ataatccaga ctcttctcga tctggagata gcgctggaga ctctgaagaa ctgactgaga 60
cagaagctgg ttctacaaca gaaactccta ctttaatagg aggaggtgct atctatggag 120
aaactgttaa gattgagaac ttctctggcc aaggaatatt ttctggaaac aaagctatcg 180
ataacaccac agaaggctcc tcttccaaat ctgacgtcct cggaggtgcg gtctatgcta 240

```

aaacattggt	taatctcgat	agcgggagct	ctagacgaac	tgtcaccttc	tccgggaata	300
ctgtctcttc	tcaatctaca	acagggtcagg	ttgctggagg	agctatctac	tctcctactg	360
taaccattgc	tactcctgta	gtatctttcta	aaaactctgc	aacaaacaat		410

<210> 136

<211> 2719

<212> DNA

<213> *Chlamydia trachomatis*

<400> 136

ctcgtgccga	aaagctttct	gctctaccaa	agagattcgt	tttttaaatt	cttcattctc	60
tctaagagat	ttagtttctt	tgcgagaaca	attgatagat	actccgtaag	tttgggggtg	120
cgggtgcatt	cataaacagc	ttcctcgtaa	tggtgtagat	tgttcggggg	atattcaact	180
actttaccaa	gtcacaggaa	gaaatatccc	tgcgaatgct	agagatcaat	acagagactg	240
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cccttccacc	tcattcctta	ctacaccttc	agatccaggg	attacagggc	acttaattct	2640
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accgataaat	ctcgtgccg					2719

<210> 137
 <211> 2354
 <212> DNA
 <213> Chlamydia trachomatis

<400> 137
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 ctaaagtgtc ctaagtaagg atgttttttag gggaaatagc gattttcagt gttgagaagc 180
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 gacttctacg aatactccaa atgttgcgat agatgtaaca cggccattat aaactttacc 480
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 aaccaagtta gcaataacgg attcctctaa ttctttcgag gcttgcctc gagcttcttt 1560
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 cccgtcgtaa gaccaaactg aggacaagac ttgaatatct tgcatgagtc tattaggaaa 2040
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 tccttcacgt tttagaaatc ctccagaggt tcttctctgc gaggaaaact tctcttgata 2160
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 aaaaacccaa gtctcgttca ttttgacgag aacagcccca ctggcctggc gagctatttt 2280
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 catggagttg tcct 2354

<210> 138
 <211> 898
 <212> DNA
 <213> Chlamydia trachomatis

<400> 138
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<210> 139
<211> 660
<212> PRT
<213> Chlamydia trachomatis
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Asn	Ser	Glu	Thr	Lys	Glu	Ser	Thr	Lys	Ala	Ser	Glu	Ala	Ser	Pro	Ser
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Ala	Ser	Ser	Ser	Val	Ser	Ser	Trp	Ser	Phe	Leu	Ser	Ser	Ala	Lys	Asn
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Ala	Leu	Ile	Ser	Leu	Arg	Asp	Ala	Ile	Leu	Asn	Lys	Asn	Ser	Ser	Pro
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Thr	Asp	Ser	Leu	Ser	Gln	Leu	Glu	Ala	Ser	Thr	Ser	Thr	Ser	Thr	Val
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Thr	Arg	Val	Ala	Ala	Lys	Asp	Tyr	Asp	Glu	Ala	Lys	Ser	Asn	Phe	Asp
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Thr	Ala	Lys	Ser	Gly	Leu	Glu	Asn	Ala	Lys	Thr	Leu	Ala	Glu	Tyr	Glu
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Thr	Lys	Met	Ala	Asp	Leu	Met	Ala	Ala	Leu	Gln	Asp	Met	Glu	Arg	Leu
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Ala	Asn	Ser	Asp	Pro	Ser	Asn	Asn	His	Thr	Glu	Glu	Val	Asn	Asn	Ile
	145				150					155					160
Lys	Lys	Ala	Leu	Glu	Ala	Gln	Lys	Asp	Thr	Ile	Asp	Lys	Leu	Asn	Lys
				165					170					175	
Leu	Val	Thr	Leu	Gln	Asn	Gln	Asn	Lys	Ser	Leu	Thr	Glu	Val	Leu	Lys
			180					185					190		
Thr	Thr	Asp	Ser	Ala	Asp	Gln	Ile	Pro	Ala	Ile	Asn	Ser	Gln	Leu	Glu
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Ile	Asn	Lys	Asn	Ser	Ala	Asp	Gln	Ile	Ile	Lys	Asp	Leu	Glu	Arg	Gln
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Asn	Ile	Ser	Tyr	Glu	Ala	Val	Leu	Thr	Asn	Ala	Gly	Glu	Val	Ile	Lys
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Ala	Ser	Ser	Glu	Ala	Gly	Ile	Lys	Leu	Gly	Gln	Ala	Leu	Gln	Ser	Ile
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Val	Asp	Ala	Gly	Asp	Gln	Ser	Gln	Ala	Ala	Val	Leu	Gln	Ala	Gln	Gln
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Ala Glu Thr Lys Val Asn Glu Leu Lys Gln Glu His Thr Gly Leu Thr
 290 295 300
 Asp Ser Pro Leu Val Lys Lys Ala Glu Glu Gln Ile Ser Gln Ala Gln
 305 310 315 320
 Lys Asp Ile Gln Glu Ile Lys Pro Ser Gly Ser Asp Ile Pro Ile Val
 325 330 335
 Gly Pro Ser Gly Ser Ala Ala Ser Ala Gly Ser Ala Ala Gly Ala Leu
 340 345 350
 Lys Ser Ser Asn Asn Ser Gly Arg Ile Ser Leu Leu Leu Asp Asp Val
 355 360 365
 Asp Asn Glu Met Ala Ala Ile Ala Leu Gln Gly Phe Arg Ser Met Ile
 370 375 380
 Glu Gln Phe Asn Val Asn Asn Pro Ala Thr Ala Lys Glu Leu Gln Ala
 385 390 395 400
 Met Glu Ala Gln Leu Thr Ala Met Ser Asp Gln Leu Val Gly Ala Asp
 405 410 415
 Gly Glu Leu Pro Ala Glu Ile Gln Ala Ile Lys Asp Ala Leu Ala Gln
 420 425 430
 Ala Leu Lys Gln Pro Ser Ala Asp Gly Leu Ala Thr Ala Met Gly Gln
 435 440 445
 Val Ala Phe Ala Ala Ala Lys Val Gly Gly Gly Ser Ala Gly Thr Ala
 450 455 460
 Gly Thr Val Gln Met Asn Val Lys Gln Leu Tyr Lys Thr Ala Phe Ser
 465 470 475 480
 Ser Thr Ser Ser Ser Ser Tyr Ala Ala Ala Leu Ser Asp Gly Tyr Ser
 485 490 495
 Ala Tyr Lys Thr Leu Asn Ser Leu Tyr Ser Glu Ser Arg Ser Gly Val
 500 505 510
 Gln Ser Ala Ile Ser Gln Thr Ala Asn Pro Ala Leu Ser Arg Ser Val
 515 520 525
 Ser Arg Ser Gly Ile Glu Ser Gln Gly Arg Ser Ala Asp Ala Ser Gln
 530 535 540
 Arg Ala Ala Glu Thr Ile Val Arg Asp Ser Gln Thr Leu Gly Asp Val
 545 550 555 560
 Tyr Ser Arg Leu Gln Val Leu Asp Ser Leu Met Ser Thr Ile Val Ser
 565 570 575
 Asn Pro Gln Ala Asn Gln Glu Glu Ile Met Gln Lys Leu Thr Ala Ser
 580 585 590
 Ile Ser Lys Ala Pro Gln Phe Gly Tyr Pro Ala Val Gln Asn Ser Ala
 595 600 605
 Asp Ser Leu Gln Lys Phe Ala Ala Gln Leu Glu Arg Glu Phe Val Asp
 610 615 620
 Gly Glu Arg Ser Leu Ala Glu Ser Gln Glu Asn Ala Phe Arg Lys Gln
 625 630 635 640
 Pro Ala Phe Ile Gln Gln Val Leu Val Asn Ile Ala Ser Leu Phe Ser
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 Gly Tyr Leu Ser
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<210> 140

<211> 598

<212> PRT

<213> Chlamydia trachomatis

<400> 140

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		35					40					45				
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	50					55					60					
Val	Asp	Val	Ser	Ser	Met	Ile	Glu	Ser	Thr	Pro	Thr	Ser	Gly	Glu	Thr	
65					70					75					80	
Thr	Arg	Ala	Ser	Arg	Gly	Val	Leu	Ser	Arg	Phe	Gln	Arg	Gly	Leu	Val	
				85					90					95		
Arg	Ile	Ala	Asp	Lys	Val	Arg	Arg	Ala	Val	Gln	Cys	Ala	Trp	Ser	Ser	
			100					105					110			
Val	Ser	Thr	Ser	Arg	Ser	Ser	Ala	Thr	Arg	Ala	Ala	Glu	Ser	Gly	Ser	
		115					120					125				
Ser	Ser	Arg	Thr	Ala	Arg	Gly	Ala	Ser	Ser	Gly	Tyr	Arg	Glu	Tyr	Ser	
	130					135					140					
Pro	Ser	Ala	Ala	Arg	Gly	Leu	Arg	Leu	Met	Phe	Thr	Asp	Phe	Trp	Arg	
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Thr	Arg	Val	Leu	Arg	Gln	Thr	Ser	Pro	Met	Ala	Gly	Val	Phe	Gly	Asn	
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Leu	Asp	Val	Asn	Glu	Ala	Arg	Leu	Met	Ala	Ala	Tyr	Thr	Ser	Glu	Cys	
			180					185					190			
Ala	Asp	His	Leu	Glu	Ala	Lys	Glu	Leu	Ala	Gly	Pro	Asp	Gly	Val	Ala	
		195					200					205				
Ala	Ala	Arg	Glu	Ile	Ala	Lys	Arg	Trp	Glu	Lys	Arg	Val	Arg	Asp	Leu	
	210					215					220					
Gln	Asp	Lys	Gly	Ala	Ala	Arg	Lys	Leu	Leu	Asn	Asp	Pro	Leu	Gly	Arg	
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Arg	Thr	Pro	Asn	Tyr	Gln	Ser	Lys	Asn	Pro	Gly	Glu	Tyr	Thr	Val	Gly	
				245					250					255		
Asn	Ser	Met	Phe	Tyr	Asp	Gly	Pro	Gln	Val	Ala	Asn	Leu	Gln	Asn	Val	
			260					265					270			
Asp	Thr	Gly	Phe	Trp	Leu	Asp	Met	Ser	Asn	Leu	Ser	Asp	Val	Val	Leu	
		275					280					285				
Ser	Arg	Glu	Ile	Gln	Thr	Gly	Leu	Arg	Ala	Arg	Ala	Thr	Leu	Glu	Glu	
	290					295					300					
Ser	Met	Pro	Met	Leu	Glu	Asn	Leu	Glu	Glu	Arg	Phe	Arg	Arg	Leu	Gln	
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Glu	Thr	Cys	Asp	Ala	Ala	Arg	Thr	Glu	Ile	Glu	Glu	Ser	Gly	Trp	Thr	
				325					330					335		
Arg	Glu	Ser	Ala	Ser	Arg	Met	Glu	Gly	Asp	Glu	Ala	Gln	Gly	Pro	Ser	
			340					345								

Ser Asp Ser Ile Tyr Glu Ile Met Met Pro Ile Tyr Glu Val Met Asn
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 Met Asp Leu Glu Thr Arg Arg Ser Phe Ala Val Gln Gln Gly His Tyr
 485 490 495
 Gln Asp Pro Arg Ala Ser Asp Tyr Asp Leu Pro Arg Ala Ser Asp Tyr
 500 505 510
 Asp Leu Pro Arg Ser Pro Tyr Pro Thr Pro Pro Leu Pro Pro Arg Tyr
 515 520 525
 Gln Leu Gln Asn Met Asp Val Glu Ala Gly Phe Arg Glu Ala Val Tyr
 530 535 540
 Ala Ser Phe Val Ala Gly Met Tyr Asn Tyr Val Val Thr Gln Pro Gln
 545 550 555 560
 Glu Arg Ile Pro Asn Ser Gln Gln Val Glu Gly Ile Leu Arg Asp Met
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 Leu Thr Asn Gly Ser Gln Thr Phe Arg Asp Leu Met Lys Arg Trp Asn
 580 585 590
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<210> 141
 <211> 788
 <212> DNA
 <213> Chlamydia trachomatis

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 gattctcgga gatcccggtt acgggatccc ctctataaat tttcgttatg gtcttgacaa 300
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 tgtctctata ctggatggtt cgtgtgattg gtttaaaatc actaggtagt tttgtttttt 480
 aagtaagaag tataaaatag attatagata ctatttttat ttttctttca caccttcaga 540
 aaaaagcttg ttaggattt gcttcgcatg aaagagtttt tagcgtacat tgtaaaaaat 600
 ctgttgata agccagagga agtgcattcg aaagaggtgc agggaaccaa tacgattatc 660
 tacgaattga ctgttgctaa gggagatata ggtaaaatta tcggtaaaga aggacgcact 720
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 ctagaaat 788

<210> 142
 <211> 788
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 <213> Chlamydia trachomatis

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 ggaagcaatt acccattgcc aagttctagc tacgaatgga cgattaagtg tgggtgctct 180
 ataccagaa acaggcagaa cccaccagct tcgtgtacat atgaagcacc tgggcacacc 240
 gattctcgga gatcccggtt acgggatccc ctctataaat tttcgttatg gtcttgacaa 300
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 gctagtgaaca aagcttccag acgatatgac ttccttaata gaaaaggaat ttagagaagg 420
 tgtctctata ctggatggtt cgtgtgattg gtttaaaatc actaggtagt tttgtttttt 480
 aagtaagaag tataaaatag attatagata ctatttttat ttttctttca caccttcaga 540

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aaaaagcttg tgtaggattt gcttcgcatg aaagagtttt tagcgtacat tgtaaaaaat 600
cttggttgata agccagagga agtgcatctg aaagaggtgc agggaaaccaa tacgattatc 660
tacgaattga ctggttgctaa gggagatata ggtaaaatta tcggtaaaga aggacgcact 720
attaaggcta tccgtacttt attggttttc gtagcaagtc gagataatgt gaaagtcagc 780
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<210> 143

<211> 1754

<212> DNA

<213> Chlamydia trachomatis

<400> 143

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tcgaggaaac gttgtaaaaa tagcgtcgca gtaatcgatc ctgcacgatt gctgccgata 180
tttttcatat ctgcaatata tgaatgaagt gccctggcat atttctctac caaaggcatt 240
ctccatagag cttccccggt ctctgatgaa gcttctgcta gatctcttgc caacacgtcg 300
ttatttgcaa aaaatccagc cacagattct cctaaagaaa caaccatagc acccgtcaag 360
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gctaaaatca aacgcccttc cgcacagtg ctgccaattt ctacagaaag gccggtcatt 480
ccaacatata catctcccat cttataggca gccgatccaa tcgcattctc tgtagctgga 540
atgatcccg tccattgat cggaagctcc aaggaagcta aagcagaaaa aattcctaga 600
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tctagtcttc cggaatcgaa tgttaccct ttaccaatga gtacggttct atctttagat 720
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<210> 144

<211> 3037

<212> DNA

<213> Chlamydia trachomatis

<400> 144

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cagaaggaaa atcttgagat ttggctacct gcccttttt tctagcatcc cgaagacgct 180
tgggggtcgc cttttctgtt ttttcgccc tagatggcca gttgcttaag cgctataagg 240
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atcccattta taaacaaaga gtaaggggtt ctttagagaa cggaatattt tttttaaaga 360
gogtttttca tgaagcacta atcttgcttt ttcttttagaa tttcttttt ctttaataata 420
aaaaggctgt gtagcctta agaaaaagct gtacaacttc ttaggtaatg aaaatgggac 480

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aaacagagtg tggaatagta ggtcttccta atgtagggaa atcaggatta tttaatgcgt 540
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 gtattgtgcc tgttatcgat ccaaggttag agaccttagc acgtatcagt cagagccaaa 660
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<210> 145

<211> 1353

<212> DNA

<213> Chlamydia trachomatis

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 tatgtccgtc catagcttct aacagctggt ctttggtcac tccctcttca tcggaaagca 180
 caacatcgag cgcataagca taaaagtaat agcgtatgct cgcattctga gggcaaggag 240
 ggcagtatcc tattttctca gcagtattta acccttggac agcaaaaaatt tgtgtcctt 300
 ctgcaagatt agagactgca ggagaaaggt tatacactat ccagtgtatc cacaacccat 360
 cctctcgaac actaggagga acatctggat cttcaacaat aagaacaaga ctttttagcct 420

ctctagggac atcagaaaaa gacagcgggtg gggagatccc aacgccctga cacgaatact 480
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 cctgtattta gggccatgct ctgtaaagcg tggccctatt cttgtactac tgtcgtagt 600
 gatcagactg ggcttgcgct tctttacgga gaagggtac ctcataccga gtggcaatta 660
 cttctctgaa caaggcgatc aaactgatgg aattaaaaat aaccatcccg caaaaaccta 720
 gatcggatag cgcccagata aactgcattc ctaagacacc acccatgggg attatcgcg 780
 tataaatagc cttcaacaat aggttagcgc gcttccctgg gatcatatat tctaaacttt 840
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<210> 146

<211> 1627

<212> DNA

<213> *Chlamydia trachomatis*

<400> 146

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<210> 147

<211> 1262

<212> DNA

<213> *Chlamydia trachomatis*

<400> 147

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<210> 148

<211> 1596

<212> DNA

<213> Chlamydia trachomatis

<400> 148

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<210> 149
 <211> 2624
 <212> DNA
 <213> *Chlamydia trachomatis*

<400> 149
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<210> 150
 <211> 2052
 <212> DNA
 <213> *Chlamydia trachomatis*

<400> 150

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<210> 151

<211> 732

<212> DNA

<213> Chlamydia trachomatis

<400> 151

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<210> 152
 <211> 1326
 <212> DNA
 <213> Chlamydia trachomatis

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<210> 153
 <211> 3141
 <212> DNA
 <213> Chlamydia trachomatis

<400> 153
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<210> 154

<211> 2275

<212> DNA

<213> Chlamydia trachomatis

<400> 154

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<211> 1909

<212> DNA

<213> Chlamydia trachomatis

<400> 155

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<210> 156

<211> 1157

<212> DNA

<213> Chlamydia trachomatis

<400> 156

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<210> 157

<211> 3957

<212> DNA

<213> Chlamydia trachomatis

<400> 157

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